

JULY 1943

'It's Important to Know In Time'

Member Associated Business Papers, Inc.; Audit Bureau of Circulations.

The Newspaper of the Industry

Inside Dope

By George F. Taubeneck

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Here It Is

Reuben Ottenheimer, Consultant to Sterling Smith of the WPB, enjoys backing the writer into a corner and giving him hail-columbia about something or other. It's not often we have so good a chance to laugh last.

Last December at the ASRE meeting in New York City Reuben had us in the usual corner, berating us for the editorial, "The Case for Civilian Supply," which appeared on the front page of the August 31 issue of AIR CONDITIONING & REFRIGERATION NEWS.

That editorial boldly and bluntly predicted that unless measures were taken soon to protect the civilian supply of refrigeration facilities, cases of food poisoning would send people to the hospital this summer.

Reuben's memory read things into that editorial which weren't there, but even so he was indignant at the idea that "people were going to be poisoned."

Well, friend, see the news story on column five of this page. See also the news story on page 1 of the July 5 issue of the NEWS.

No Concentration

Another "last laugh" from that same meeting: we debated publicly the matter of industry concentration with our good friend George Meek, then of the WPB, now of the LLA. George dolefully predicted that by this time less than half a dozen complete-unit manufacturers would be left in the business. Concentration-of-industry was going to close up the remainder.

This was contrary to our belief, and in September, 1942, the NEWS in an editorial suggested that manufacturers in this industry might stop worrying about "concentration."

All of us should be happy to see that this unworkable-in-America idea was allowed to die its predestined death.

Chester Davis

Some subscribers who read with care the letter from Chester Davis in the July 5 issue of the NEWS have said that the letter indicates he had no intention of resigning as War Food Administrator when he wrote it.

They are quite right. He didn't. Davis, it appears, was asked to resign by what Senator Arthur Vandenberg of Michigan calls "the palace guard."

Davis was highly thought of in Congress as well as with the public. And Congress was getting set to grant him the powers he needed to give the nation a sound food administration. The "palace guard" didn't want Davis, or anybody else, to have those powers.

The Palace Guard

Just who belongs to "the palace guard," the "invisible" behind-the-scenes men who issue directives in the name of the President? According to a most reliable source, they are:

Ben Cohen (of the famous Cohen-Corcoran team), who is the adviser to Byrnes; Edward Pritchard, who is the idea man for Vinson; Richard Gilbert, who is planted with Prentiss Brown; and Paul Porter, the "com-

Air Conditioning & REFRIGERATION NEWS

Re-entered as second-class matter October 3, 1936 at the post office at Detroit, Michigan, under the Act of March 3, 1873.
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'Written To Be Read on Arrival'

Issued Every Monday
at Detroit, Michigan

JULY 19, 1943

Vol. 39, No. 12, Serial No. 748
Established 1926.

WAR WORKER EATS SPOILED HAM, DIES

Detroit Service Firms Get WMC Help In Training New Men

DETROIT.—A specific program to train new refrigeration servicemen, which is expected to receive final approval soon from the state headquarters of the War Manpower Commission, has been worked out by the Refrigeration Contractors Association of Detroit in conjunction with the various training divisions of the WMC.

Twenty-five adult men have already signed up to take the training, and proponents of the plan hope to enroll as many as 60. The trainees are to get eight hours of instruction per week.

Major function of the members of the Refrigeration Contractors Association is to enlist men for the training. Then those members who have signed the "agreement" to the plan must hire those who are being trained.

The contractors are doing a "selling" job on the men that they are getting to enroll, because in Detroit particularly almost any able-bodied man can make more money in a factory than he can at working at a service trade. One reason for this, of course, is that service prices are frozen, and hence it is nearly impossible to step up a man's income to meet prevailing factory wages.

The contractors must do a job of selling a prospective trainee on getting in on the ground floor of a trade that will be a good, steady income producer in boom times or bad, and on some of the other advantages which the service trades offer, such as the relative "freedom" of the employee on the job. This latter item, it is said, has proved appealing to many plant workers who are irritated by the confining nature of a plant job, and plant rules, etc.

One very important item in this training program move in Detroit is that it is gaining recognition for the refrigeration service field from the War Manpower Commission. The Refrigeration Contractors Association has made several attempts to many plant workers who are irritated by the confining nature of a plant job, and plant rules, etc.

(Concluded on Page 24, Column 1)

Water Coolers Okayed For Shipboard Use

WASHINGTON, D. C.—Production of special self-contained drinking water coolers for use aboard ship is permitted for an indefinite time, under a War Production Board action of July 9.

An exception to regulations governing such production expired on July 6, and an indefinite extension was requested by the Services.

Provision for it is made in (c) (3) (ii) of Schedule I of Limitation Order L-126, which now reads:

"(ii) The production, delivery, and acceptance of self-contained drinking water coolers, for use aboard ship, delivered to or for the account of, and for direct use by, the United States Army, or Navy, the Maritime Commission, or the War Shipping Administration, where (a) such coolers are manufactured in accordance with plans which have already (prior to July 3, 1942) been drawn and accepted by or for the account of such agency, or (b) such coolers are manufactured in accordance with the specifications issued prior to July 3, 1942, by such an agency (including performance specifications) requiring construction, design or materials, not in accordance with the restrictions of this schedule; but in any case such coolers may vary from the restrictions of the schedule only to the extent required by such plans or specifications."

(Concluded on Page 13, Column 1)

More Than 50 Persons Made Ill In Two Food Poisoning Cases

Expansion Program On Locker Plants Is Given Approval

WASHINGTON, D. C., July 15—The program calling for the allocation of materials to provide for the construction of a number of new refrigerated locker storage plants is understood to have received final approval, according to a report from an unofficial source here today.

No details were immediately available on the number of new plants that will be permitted, the qualifications or restrictions as to areas, etc., in which new plants will be permitted, or the manner in which application may be made. It is hoped that

(Concluded on Page 4, Column 1)

'Share-Steel' Drives Called Vital To War

DETROIT.—War plants within the Detroit region of the War Production Board are being asked to review carefully their allotments of steel for the third and fourth quarters of this year. If these amounts can be reduced, the unused portions can be transferred to other contracts now held up for lack of material.

This effort is part of WPB's nationwide "Share-the-Steel" drive to provide steel for delayed war projects.

D. J. Hutchins, director of Detroit's WPB region has just issued the following statement on the steel situation to the larger war plants in this area:

"To produce the war goods which our armed forces tell us they must have this year we need more steel—at least two million tons more!"

"Part of this will come from steel
(Concluded on Page 4, Column 5)

'But It's Another Kind of Sabotage, Mr. Coroner'

Contaminated Ham

No Evidence Of Sabotage, Coroner Says

Dr. Mendenhall Reports Tests Reveal No Sign Of Metallic Poisoning.

21 Victims Are Still In Hospital

41 Employees Stricken; Board Of Health Will Continue Investigation.

Contamination in boiled ham in the plant

President Greets

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Bulletin!

HILLSDALE, Mich.—Continued unsuccessful attempts of the Hillsdale Steel Products Co. to obtain adequate refrigeration for its cafeteria were dramatically brought to light last week when a nurse and five war workers were taken ill after eating tainted food prepared in the company's lunch room.

Inadequate refrigeration was responsible, declared Dr. C. Moench, chief of the county health unit after his investigation.

The company has been equally unsuccessful in its endeavors to secure electrically refrigerated water coolers. Thirsty workers must use deep well outside the plant. Unfortunately the plant's toilet sewers also are nearby. No one has been poisoned there yet, but the company is worried.

FT. WAYNE, Ind.—A boiled ham, contaminated because of improper refrigeration, killed one defense plant worker, hospitalized 22 more, and sent 24 others home violently ill here last week.

The ham was on the breakfast menu at the Broadway plant cafeteria of the General Electric Co., one of the city's largest war production centers. About three hours later 47 of the 250-300 workers who had eaten there were seized with attacks of cramps and nausea, and rushed to the company's dispensary.

One of them, Elzo Mountz, 43, a press operator who had been with the company 14 years, died there.

A brief questioning of those who were less seriously ill by Dr. H. O. Bruggeman, chief of Civilian Defense emergency medical service and a member of the company's medical staff, revealed that all had eaten ham that morning in the cafeteria.

The ham was purchased from a Ft. Wayne wholesaler, who in turn got it from a Ft. Wayne packer. Any bacterial growth that will allow this kind of food poisoning, reported Dr. Karl Eberly, city health commissioner, occurs only where adequate refrigeration is not maintained.

The more seriously ill were taken to St. Joseph's Hospital and given emergency treatment consisting of emptying the stomach and bowels, giving oxygen, intravenous injections of glucose and blood plasma, and antitoxin.

Immediate examination of the food
(Concluded on Page 4, Column 4)

Great Increase Shown In Produce Spoilage

DETROIT—Greatly increased spoilage of produce arriving in Detroit because of failure to provide completely adequate refrigeration for the produce in shipment, has been reported by George Thierwechter, manager of the Union Produce Terminal.

Thierwechter criticized government regulations that prevented refrigerator cars from being more than three-fourths filled with ice.

While this amount would hardly be enough if cars were moved rapidly to destinations, the Terminal manager pointed out that under war conditions cars were frequently shunted to sidings to allow passage of troup trains and via lwar materials.

The result is that the life of the produce is reduced by one or two days with a large percentage of loss."

(Concluded on Page 4, Column 3)

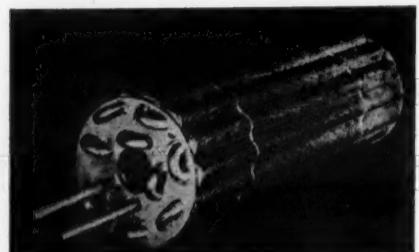
These are headlines from the Ft. Wayne, Ind. "News-Sentinel" following a food poisoning case in which one war worker died, and nearly 50 others became violently ill. Subsequent investigation proved that the cause was "improper refrigeration somewhere along the line." The rash of such cases breaking out all over the country all have had a failure to refrigerate foodstuffs properly as the cause.

Puro ELECTRIC WATER COOLERS

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The Priorities Quiz

(AIR CONDITIONING & REFRIGERATION NEWS, with the aid of a man who is actually engaged in handling much priorities work, will attempt to answer questions from readers about priorities problems. The editors will not guarantee to answer all questions, nor can they guarantee that the answers will be legally perfect, but an effort will be made to provide a guide to correct procedure wherever possible.)

CMP Applications For Fourth Quarter

Q. Has the deadline been announced for filing of CMP applications?

A. Yes. CMP-4B application should have been in Washington on or before July 15, 1943. The ASU forms for aircraft parts were due in Dayton at the Aircraft Scheduling Unit on the same date. If you have not already heard from your Industry Branch of the War Production Board, contact your Regional WPB Office for the revised CMP-4B form. This quarter you must show in addition to the material you require for fourth quarter production the advance allotments already made to you and request an allotment to the extent of the difference only.

One More Ruling on Certification Method

Q. Some suppliers are still requiring the use of both the certification under CMP Regulation No. 7 and the certification under Priorities Regulation No. 3. Other suppliers tell us that CMP Regulation No. 7 cer-

tification may be used to certify any order. Can you give us the correct information?

A. Priorities Regulation No. 3, as recently amended, now provides that either the certification as prescribed by CMP Regulation No. 7 or the certification given in Priorities Regulation No. 3 may be used in extending any preference rating. The necessity, therefore, for differentiating between orders as to which of the two certifications should be used has been eliminated to the extent that an order carrying a preference rating without an allotment symbol may be certified by using either certification. An order, however, carrying both a preference rating and an allotment symbol must be certified in accordance with CMP Regulation No. 7; Regulation No. 3 will not do in this case.

Bills of Materials On Some 'B' Products

Q. We have received numerous requests from customers asking for Bills of Materials on certain "B" products which we are producing. It was our understanding that we were

Frigidaire Turns Out the 100,000th



Frigidaire factory executives and ordnance officials shown inspecting Frigidaire's 100,000th machine gun include: C. W. McMullen, manager, standards division; Capt. J. D. Wyatt; C. A. Copp, manager, War Contracts division; E. R. Godfrey, assistant general manager; M. M. Roberts, manager of plants; Lt. G. P. Dubia; and S. M. Schweller, chief engineer.

not required under CMP Regulations to furnish Bills of Material on "B" products. Has there been some official change in this procedure?

A. Yes. It is advisable to secure a copy of Instructions of Bills of Materials as issued May 15. You will find that in some instances you may be requested to file a complete Bill of Materials for your B products either with the War Production Board or with a customer who has been requested by a Government agency to file a complete Bill of Materials on some item into which he incorporates your product. Under these new revisions, you are required on detailed Bills of Materials to show the entire material content of your product whether or not materials are on the CMP materials list.

Because of the great deal of extra paper work this may bring about, it has been suggested by the War Production Board that before making Bills of Materials for your customers you make full inquiry of them so as to determine upon whose authority this Bill of Material is requested. You are not required to go to a lot of trouble in furnishing Bills of Materials to satisfy someone's curiosity.

Rules Given on Use of Facsimile Signatures

WASHINGTON, D. C.—New regulations covering the use of a facsimile signature for a priority endorsement on purchase or delivery

orders have been issued by the WPB. Text of the new regulation is as follows:

§ 944.27. Priorities Regulation No. 7: Signature of endorsements or certifications. (a) Whenever an order or regulation states that a purchase order or delivery order (or a document referring to it) must carry an endorsement or certification, the endorsement or certification must be signed by the party placing the order or by a responsible individual who is duly authorized to sign for that party. The signature must be either by hand or in the form of a rubber stamp or other facsimile reproduction of a handwritten signature.

(b) If a facsimile signature is used, the following requirements must be observed: The individual whose facsimile signature is used, or another responsible individual who has been duly authorized by him to act for him, must give his approval each time the facsimile signature is put on an endorsement or certification. This approval must be shown each time by a written record signed or initialed by the individual who approves the use of the facsimile. A single record may refer to several purchase or delivery orders as to which the use of the facsimile signature has been approved at the same time, but each order must be separately shown on the record. The record need not be sent out with the order but must be kept on file for at least two years for inspection by representatives of the War Production Board.

(c) The party who places the order, the individual whose signature is used, and the individual who approves the use of the signature will each be considered to be making a representation to the War Production Board that the statements contained in the endorsement or certification are true to the best of his knowledge and belief, subject to criminal penalties for misrepresentation.

(d) The provisions of this regulation supersede any inconsistent provisions in any regulation or order issued before July 6, 1943.

MEN
INDUSTRIES
and NATIONS

depend on
REFRIGERATION
accurately controlled

Amazed disbelief would have greeted a man who, a few years ago, would have attempted to foretell today's wide use of Refrigeration! For who would have looked for Refrigeration in the Machine Shop, instrument factories, in aircraft plants—or on battle fronts in far-off islands and continents?

Tremendous progress in a short span of years, for an industry already close to American life and peoples. But it's a foretaste of great things to come.

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Export Dept. 100 Varick St. New York City

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DEPENDABLE
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Orders Filled
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TWENTY-EIGHT YEARS OF KNOWING HOW

Suspect a Government Questionnaire? Then Ask This Committee 'What About It?'

Reporting Forms Must Carry an Approval Number

WASHINGTON, D. C.—Corrective measures regarding the issuance by Federal agencies of unauthorized questionnaires, the existence of which are imposing an unwarranted burden on American business, have been reiterated by the Advisory Committee on Government Questionnaires, with the concurrence of the Bureau of the Budget.

With a few exceptions requests for information, as defined by law, are subject to the review of the Bureau of the Budget and may not be issued by a Federal agency unless authorized by the Bureau. The Advisory Committee, concerned with the circulation of questionnaires that have not been so authorized, advised businessmen to exercise more caution about those report forms that are suspect.

INQUIRE OF COMMITTEE

"Inquiry should be made of the Advisory Committee, or of the Bureau of the Budget whenever doubt exists as to whether the use of a report form has been authorized," the Committee announcement said. "Whenever desired, no disclosure will be made of the person or organization making the inquiry."

W. J. Donald, Chairman of the Advisory Committee, added "While inquiries about suspected forms may be made directly to the Committee or to the Budget Bureau, businessmen may, if they prefer, write directly to the Federal agency issuing the form, or instead to their trade association, chamber of commerce, retail organization, professional society, or other organization, which may in turn communicate in confidence with us."

"Business and industry are still largely unaware that a mechanism has been established by which governmental information requests can be kept to a minimum," Mr. Donald said. "With certain exceptions, particularly requests that are sent to less than 10 respondents, and those originating from exempt Federal agencies, such as the Bureau of Internal Revenue, every authorized request for information, however made, must have the Budget Bureau's approval."

BUDGET BUREAU STAMP

"Report forms having such approval bear a Budget Bureau approval number, and in most cases an expiration date, both appearing in the upper right hand corner of the form. Whenever, owing to the absence of an approval number there is a fair presumption that the form is unauthorized, businessmen are urged to avail themselves of the opportunities afforded them for relief."

"The Government is as determined as is business to keep reporting requirements to a minimum. The cost to American business, in both man-hours and dollars is very large. To the extent that reports are necessary, whether they be directly associated with the prosecution of the war, or essential civilian purposes, businessmen should do cooperate without complaint. The Budget Bureau's approval numbers are symbols that consideration has been given to such necessity. Businessmen are, however, obligated to themselves and to the Government to cooperate to the extent of scrutinizing requests for information from the point of view

Candy Dealers Urged To Buy Cooled Cases

PHILADELPHIA—An advertising campaign launched recently in trade journals by Stephen F. Whitman & Son urges candy dealers to invest in modern refrigerated candy cabinets after the war.

Four color, four-page inserts in July issues of "Chain Store Age" and "NARD Journal" were the opening guns in the campaign carrying the story to the candy merchants.

"With an eye to the future, Whitman's are doing something now about your postwar candy business," the first advertisements told the trade.

The manufacturer of famed "Whitman's Chocolates" introduced its own type of refrigerated cabinet to the trade a number of years ago. This plan was adopted, the management declares, for the reason that its studies showed that failure to do a profitable candy business is caused largely by returns and last sales because of stale candy.

Louis L. McIlhenney, president of the company, says that more than 1,200 dealers have proved that the installation of a modern refrigerator will step up candy sales 50 to 35%.

The Whitman's plan on cabinets is worked out in the following manner: The estimated price of the postwar cabinet is \$300 and the dealer makes a down payment of \$100, receiving a certificate of purchase under which he completes the payments in eight monthly instalments of \$25 each.

Volunteers Flock To Cool Defense Center

NEW YORK CITY—Women here have ferreted out an air conditioned spot in which to give vent to their patriotic fervor, according to Mrs. Eloise Skidmore, director of the Aircraft Warning Corps, and as a result she is nearly overcome with volunteers to do "overtime" work in the delightfully cool quarters of the N. Y. Air Defense Wing Aircraft Warning Center.

"It's better than a movie," says Mrs. Skidmore.

Farmers Federation Aids Carolina Locker Drive

WAYNESVILLE, N. C.—Plans for construction of frozen food locker plants for rental purposes in Waynesville, Asheville, and Hendersonville are nearing completion, directors of the Farmers Federation report.

After complying with priority rulings, each plant will include quick-freezing units, rental lockers, and meat curing vaults, according to those in charge.

A professional meat cutter will be placed in each plant by the Farmers Federation so that all meats will receive expert attention. The storage lockers will be maintained at a temperature of about 0° F.

Farmers and residents of this locality are expressing a great deal of interest in the frozen food process and it is believed that all locker spaces will be contracted for by the time they are completed. According to an official, 10 or 12 people in each community will be named to make up an advisory committee in establishing the plants.

How YOUR KEROTEST VALVES ARE SERVING AMERICA'S WAR EFFORT

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400 Feet down in the Ocean



Our Fighting Men breathe easily

thanks in part to the dependability of
KEROTEST brass valves

There can be no compromise in precision control and dependability of valves supplying life-supporting oxygen to our fighting men. Kerotest Valves fully meet this great responsibility because they are designed and engineered to do a specific job better.

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PITTSBURGH, PENNSYLVANIA



The U. S. Maritime Commission's Maritime "M" and Victory Fleet Flag, awarded to KEROTEST in recognition of outstanding production of valves and fittings for marine service.



Expansion Program For Locker Plants Said To Get Okay

(Concluded from Page 1, Column 4) these details will be available for publication in the next issue of the News.

The U. S. Senate Subcommittee on Food Supply, which held hearings on the proposed expansion program two months ago, is said to have backed the original request for a 1,000 new plants! However, the recommendation by the Department of Agriculture to the Materials Requirements Committee of WPB is thought to have reduced this figure considerably. As the program was drawn up it was indicated that all applications for priorities for the construction of such new plants would be made first to the War Food Administration of the Department of Agriculture.



Jobbers Have New Application Form & Rules For Reporting Inventory Data

(Concluded from Page 1, Column 2) cut out, this block becomes a control card bearing the WPB case number, the date of filing of the application, and the name and address of the applicant. This improvement alone is expected to eliminate the work of several typists and will speed up the flow of cases.

3. Spaces to be filled out are numbered, with corresponding numbers listed on the instructions.

4. After indicating the general type of supplies covered by the application, the distributor is now required to report his current sales and inventory figure for his entire business. The option of showing figures only for a department or a class of materials has been removed in order that a picture of the entire operation of the applicant may be secured.

5. Date and case numbers of the applicant's most recent WPB-547 or PD-1X applications covering any of the items appearing on the new application must be included. Also, the form must show whether or not ratings were assigned or whether a re-application is being submitted. Purpose of this is to prevent any abuse of the application form and to provide a check against persistent resubmission of an application which has been once rejected.

6. Previously, applicants were required to show their inventories as of Dec. 31, 1941. They are now allowed to select any month in the period between Dec. 31, 1941 and the month six months previous to the date of the application. Also, book

or physical inventory may now be used in computing this figure.

7. Space is now included in the application for inserting any added information other than that called for by the application, obviating the need of sending a separate letter.

8. All references to Order L-63 are removed from the form. Instead, certification must be made to the effect that receipt of the material included in the application will not increase inventory beyond the limits of any WPB order or regulation or beyond a practicable working level.

More Produce Spoilage Now Being Revealed

(Concluded from Page 1, Column 5) he added.

Despite a 15% increase in Detroit's population, 30% less fruits and vegetables have been shipped to this area.

Thierwechter said that more than 10% of the decrease was due to spoilage, as compared to 1 or 2% in normal times.

During June 3,068 cars of produce were received, with a 10% spoilage as compared to 3,478 last year, with 1% loss.

Principal items ruined through lack of proper refrigeration were cantaloupes, potatoes, and beans.

Of 16 cars of cantaloupes received Thursday, 14 were overripe when handlers started to unload them.

Improperly Cooled Food Proves Fatal To Defense Worker

(Concluded from Page 1, Column 5) particles corroborated the earlier diagnosis of botulism poisoning, and an emergency request was wired to Chicago for anti-botulism serum. Its arrival on the 10:06 p.m. plane ended the fight against further fatalities.

The autopsy conducted under the direction of Dr. E. N. Mendenhall, Allen County coroner, revealed no arsenic or other metallic agents, and no evidence of sabotage. Since the plant is engaged 100% in war work, however, the FBI is carrying its investigation further.

All meat carried by the plant cafeteria was given a thorough testing. The lot in question had come to local dealers through the usual safeguarded channels, but detection of the staphylococcus germ involved is not possible in ordinary inspection methods, explained Dr. D. R. Benninghoff, deputy county coroner.

"The staphylococcus that occurred here grows best in slightly oily or fatty food that is non-acid in reaction," he explained. "It is impossible to detect by smell, taste, or appearance. It grows rapidly in the absence of low temperature.

"There have been several small outbreaks of food infection in the state already during the past few weeks of warm weather. We feel sure that there will be others unless the utmost care is taken in homes, restaurants, and public eating places to see that food is handled in the cleanest way possible and kept under constant and efficient refrigeration."

Small Contractors To Get 'Preferred Rating' To Speed Up Work

NEW YORK CITY—As a spur to production of planes, barges, land vehicles, and other automotive equipment, a special allotment program under the controlled materials plan is being set up by the War Production Board by which manufacturers of smaller components will be allowed "bank loans" of essential materials for the third and fourth quarters of this year, spokesmen for prime contractors made known recently.

Although details of the plan were not revealed, the ultimate results will see the same rating applied to all components of the entire contract, thus assuring earlier completion of the final product and a speed-up in certain types of military procurement for the remainder of the year, it was said.

Operating on a highly selective basis, the new procedure will require small contractors, particularly those engaged in the forging, stamping, and steel spring business, to show that they are having difficulty in getting materials under the present "A" products procedure, reports indicated.

Thus, in case the three-quarter steel requirements of a manufacturer are going to be 1,000 tons and his stock is reduced to a point where his output is likely to be proportionately reduced while awaiting uncertain arrivals of steel, he would be able to get a "bank loan" of 1,000 tons under the new plan.

That the Army Ordnance is now rerating many of its contracts to do away with split ratings for components of essential automotive equipment was intimated by the contractors. This feature would increase the speed at which end-products are finally assembled and is said to be the objective of the program.

To straighten out a similar problem troublesome to contractors, WPB's steel division is said to have ruled against the system prevalent in steel mills which automatically refuses to accept any orders for less than minimum mill quantities.

WPB says that CMP regulations are being misconstrued and that from now on the mills will not be permitted to refuse such orders but will be required to "basket" small orders until a minimum mill run has been accumulated.

Producers also reported that by July 15 the WPB field staff expects to have accomplished much of its work in the "share the steel" drive.

'Share-Steel Drive Is Necessary To Insure Production

(Concluded from Page 1, Column 4) mills which are being asked to step up their output. More will come from new furnaces which are being rushed to completion.

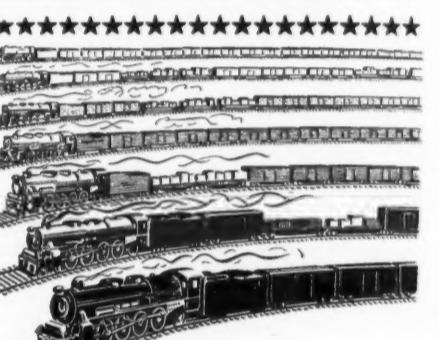
"For the remainder, the War Production Board is turning to 30,000 steel-consuming industries throughout the country.

"Earlier war production experiences created conditions that caused some industries to overload with materials because of the uncertainty of deliveries.

"Since the Controlled Materials plan became fully effective on July 1 long inventories are unnecessary. For example, under this plan, plants which have been carrying a 45-day supply of steel may find a 30-day stock adequate. This inventory shrinkage will enable some other plant to use the 15-day supply which is no longer needed.

"Therefore, we would like to have war plants carefully check existing inventories. Wherever they have stocks above normal requirements, they should cancel or defer a like quantity from current mill schedules.

"We also request that these plants re-analyze their CMP allotments of steel. Unused allocations should be returned to WPB immediately so that they can be reallocated to other users. This means better distribution of the available supply."



By the Trainloads-



Refrigeration

Serves the Army

Our fighters, both overseas and in America, have better food than those of any army that ever marched. The freshness of this food is protected by adequate refrigeration.

Much of the refrigeration used by the Army takes the form of ice. To service the thousands of ice chests in field kitchens near the front lines, hundreds of ice-making plants are being provided.

Other cooling systems serve cold storage, provide refrigerated transport, do quick-freezing, cool drinking water and beverages, keep serums and plasma, air condition hospitals, store parachutes, make explosives, test guns, airplane engines, and tanks.

Frick Refrigeration serves in every one of these ways. The Army buys Frick Equipment in trainloads! And so does the Navy!



Amcoil Test Chambers that are being designed today are blue prints for the post-war chambers that will be required to test the products that you will develop in the years to come.

Today, chambers are being built by Amcoil Engineers for testing high and low temperature conditions . . . for high-altitude testing . . . for humidity control. All will be in a fully developed stage for solving your temperature, pressure and humidity developments in later years.

IN THE WORKS...SOON ON THE WAY

Something radically new in commercial cooling equipment is being produced by AMCOIL. Sorry we cannot tell you more—now. Watch future Amcoil advertisements.

**Serving
UNCLE SAM**

AMCOIL

AMERICAN COILS CO.

25-27 Lexington Street • Newark, N.J.

Syracuse Firms Give Leaves of Absence To Workers With Farmhand Experience

SYRACUSE, N. Y.—Local industrial firms here have arranged temporary leaves of absence for industrial workers with farm experience under a plan designed to help relieve the critical manpower situation now confronting the farmers of Onondaga County. Cloud Wampler, president of Carrier Corp. and head of the Syracuse Manufacturers' Association, sponsors of the plan, announced that more than forty companies in the Syracuse area are cooperating with the War Manpower Commission and the U. S. Employment Service.

Mr. Wampler outlined the program, stating, "Unseasonable weather has created problems for local farmers which cannot be solved without emergency measure involving the use of extra manpower. The only reservoir of experienced farmers is in the industrial plants of the area. Industry, therefore, must act. Otherwise," he continued, "there will be a shortage of food both at home and at the front. It is our duty to the best of our ability in meeting this emergency and in making available much needed manpower this can be done without reducing war production."

The plan set up by Carrier Corp., of which Mr. Wampler is president, is typical of programs now in effect in other companies. In a bulletin to

Carrier employees, the plan is explained:

"Carrier is issuing temporary leaves of absence and is ready to issue others when the employee's department head can make adjustments so that the war effort is not hindered.

"These temporary leaves of absence protect both the employees' seniority and vacation rights. The only requirements are (1) that the employee has had farm experience; (2) that the department head can make arrangements for an adequate substitute; (3) that the employee agrees to spend his leave on a specified farm or farms and return to the company when the leave expires. Such leaves of absence will be granted only for the peak planting season."

The following Syracuse firms also have agreed to take part in the program: The Solvay Process Co., Pass & Seymour, Inc., the local plants of the Crucible Steel Co. of America, and the Easy Washing Machine Corp.

Mrs. Anna M. Rosenberg, Regional Director of the War Manpower Commission, said, in regard to the new movement, "I think this program is an excellent example of the kind of cooperation that can be obtained in seeking to achieve important objectives."

WPB Asks Sale of Idle Water Tubing From Excess Stocks

WASHINGTON, D. C.—Sale of idle copper water tubing in the hands of water utilities and other owners to Copper Recovery Corp. has been requested by the War Production Board.

Prices offered for excess stocks of copper tubing are reported substantially above scrap prices. CRC will pay 24 cents a pound for tubing under the $\frac{3}{4}$ -inch size and 18 cents a pound for $\frac{3}{4}$ -inch and larger sizes.

Although an earlier call asked for new copper water tubing only, plans were revised in order to recover scrap and remnants as well. New tubing must be reported on Form WPB-2687, Part 1, and scrap and remnants must be listed on Part 2 of this form, WPB instructs.

Direct transactions between owners and purchasers of copper tubing which can be used in its present shape will be handled by WPB, but because this amount will be so small, CRC has been authorized under Utilities Order U-1 to buy all other excess copper tubing for resale to mills and refineries where it can be remelted and formed.

Navy Commissions Harold Gabrilove

NEWBURGH, N. Y.—Harold Gabrilove, partner in the Shapiro Sporting Goods Co. and well known figure in the electric appliance business, has entered the United States Naval Reserve with the rank of lieutenant (j.g.). He has been with the Shapiro Co. for 12 years, and has been given a leave of absence for the duration.

During Lt. Gabrilove's absence for duty, Hyman Shapiro, president of the company, will devote his attention to the business, assisted by A. P. Barry, sales manager of electric appliances, and Murray Conover, sales manager of general merchandise. These men have been associated with the company for a great many years.

Cunningham Named To Head Carrier's Service Department

SYRACUSE, N. Y.—T. M. Cunningham has been appointed general manager of the construction and service department of the Carrier Corp.

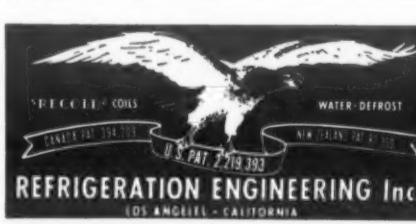
G. D. Harbin has been designated regional construction manager of the central region, to fill the vacancy created by the transfer of Mr. Cunningham.

The air-conditioning and refrigeration industry is well acquainted with both men. Mr. Cunningham has managed construction and service in the central region for the past eight years. He supervised the installation of many large air-conditioning and refrigeration systems for Carrier. Prior to that he established the Dallas and New Orleans offices, and has been active in the American Society of Heating and Ventilating Engineers.

Mr. Harbin has been associated with Carrier for 13 years, both in the factory and in the supervision of equipment construction.

Mr. Murphy outlines the duties of the construction and service manager to include: (1) coordination of all field construction work; (2) establishment and control of construction policies, methods and standards; (3) supervision of training programs and the maintenance of proper and adequate construction and service personnel; (4) and the maintenance of field construction shop facilities, tools and machinery.

The regional construction departments will continue, as in the past, under the administration of the regional managers.



SHERER VEGETAIRE { Limited Number Available Without Priority For Immediate Shipment }

Finest produce case money will buy. Builds sales and profits for you. Write for franchise details. Also available—all types of reach-in refrigerators and walk-in cooling rooms for government procurement agencies.



SHERER-GILLETT CO., MARSHALL, MICH.

BOUND FOR UNKNOWN PORTS



TODAY

In the early morning mists, a great convoy steals away for unknown ports, with its precious cargoes of men, munitions and food. Food for consumption on the voyage, for our boys in faraway countries, and for the oppressed peoples all over the world. Food, kept fresh and wholesome by refrigeration; only one of the many ways in which the refrigeration industry is helping to speed Victory.

"DL" Contact Makers (Controls), specially designed for the rigors of wartime service, are in use today, by the thousands, on Maritime and Naval vessels, large and small, accurately controlling temperatures of food storage compartments, holds, refrigerated cases, etc., as well as protecting their engines from damage due to insufficient cooling or lubrication.

TOMORROW

The refrigeration industry will continue to play one of the most vital parts in our civilian life, assuring everyone a supply of fresh, wholesome food, in or out of season.

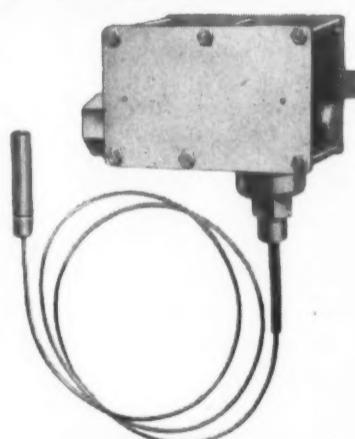
Fresh seafood for the rancher in Arizona; fresh raspberries in January for the businessman in Boston. Low temperature storage units, and multiple temperature units for storage of meats, fruit, and frozen foods for the home will be within the reach of all.

The valuable data gained by the industry in production for war, will be used to make better products for peace. "Detroit" products then, as now, and as in the past, will continue to be the best that it is possible to produce for the refrigeration industry.



THESE PRODUCTS HAVE BEEN ESPECIALLY DESIGNED FOR WAR-TIME SERVICE

The No. 220 Hi-Shock Contact Maker is designed to withstand a 2000-ft. pound shock and will operate when completely submerged in water to a depth of 25 feet.



The No. 250-WT Water-Tight Contact Maker is designed for wet locations, where conditions may subject it to dripping or spray. It will operate submerged to a depth of three feet.

The above contact makers are available in refrigeration ranges for control of air, or liquid temperatures.

Write for Bulletins 204 and 206 for further data.

DETROIT LUBRICATOR COMPANY

General Offices: DETROIT 8, MICHIGAN

Division of AMERICAN Radiator and "Standard" Sanitary Corporation
Canadian Representatives—Railway and Engineering Specialties Ltd., Montreal, Toronto, Winnipeg

"DL" Heating and Refrigeration Controls • Engine Safety Controls • Safety Float Valves and Oil Burner Accessories • Radiator Valves and Balancing Fittings • Arco-Detroit Air and Vent Valves • "Detroit" Expansion Valves and Refrigeration Accessories • Air Filters • Stationary and Locomotive Lubricators



Workers Get Story Of Industry's Role

(Concluded from Page 6, Column 5) of the greatest medical developments of the past century.'

"What is this miraculous substance called plasma? By definition, plasma is simply the clear fluid which results when the red and white corpuscles and other suspended materials are removed from whole blood. What are the advantages of plasma? Briefly, it has proved to be amazingly effective in the treatment of shock; it can be used without regard to blood type; it is easier to transport and use than whole blood. For these reasons plasma is being used extensively by our armed forces.

"From the moment blood is taken—whether for typed whole blood for blood banks, or for processing into dried or frozen plasma—refrigeration is vital. Without it, whole blood spoils rapidly. Without it, frozen plasma quickly deteriorates and becomes useless. Without it, dried plasma is not possible.

"Today, with millions of civilians giving their blood that the wounded may live, blood banks and blood plasma have come into their own. And the possibilities for peacetime relief of suffering and post-operative treatment seem equally boundless.

Price Ruling Given on Vacuum Cleaner Sets

WASHINGTON, D. C.—Maximum prices at all levels for used household vacuum cleaner attachment sets, when sold in combination with used vacuum cleaners, may not exceed prices specifically listed in the regulation covering this merchandise, the Office of Price Administration has ruled in Amendment No. 2 to Price Regulation 294.

Any other prices for attachment sets would raise the price level for combined vacuum cleaner and attachment sets above the adjusted base-period prices for the same combination, and therefore would be contrary to the intent of the regulation, OPA said.

Clarifying provisions in the regulation regarding the sale of attachment sets, the amendment points out that retail maximum prices for sets (\$5.50 for a standard set and \$8.50 for a deluxe set)—listed separately from those for used cleaners—were especially calculated to bring the prices of combination vacuum cleaner and attachment sets up to the level of the adjusted base-period.

UNICON

"The Logical Trend in Air-Cooled Condensers"

KRAMER TRENTON CO.
Heat Transfer Products
TRENTON, N. J.

REFRIGERATION PARTS NEEDED

• Idle and surplus inventories of refrigeration parts can now be put to essential use in helping to maintain the nation's huge investment in refrigeration.

We buy outright for cash, usable parts for distribution to over 20,000 refrigeration service-men customers. Let us put your idle inventories to good use—you will then be helping conserve scarce and precious materials.

The Harry Alter Co.
1728 So. Michigan Ave.
Chicago, Illinois

Department Store Restricts Servicing To Old Customers

MONTGOMERY, Ala.—Although it has been giving regular appliance repair service to the general public for more than 10 years, the refrigerator repair shop of the Montgomery Fair department store announced recently that its facilities would be restricted to "old customers"—people who purchased their appliances from the store.

"We found this absolutely necessary in order to meet the demands of our own customer list," the manager explained. "Calls have been pouring in faster than we can answer them with a reduced staff of mechanics. Before the war we had four men and helpers. Now we can keep only two and one helper, with vastly more calls expected for the summer season. We think we have an obligation to the

customers who bought their refrigerators through our appliance department, and whom we expect to sell again."

Though the repair desk in the appliance department is now turning down calls from anybody not on the "selected list" of Montgomery Fair customers, it has arranged to at least refer a qualified independent shop to do the work, sending out men to get lists of such firms.

A goodwill-building feature which the shop recently introduced was a direct mail letter sent around to all refrigerator owners pointing out that Montgomery Fair will henceforth give emergency repair service where it is urgent—such as for the mother of small children who must keep milk and baby foods in perfect condition, or homes where invalid's supplies must be refrigerated.

The store is carrying out guarantee periods on several hundred refrigerators, and applies a \$2 flat rate charge for call backs or additional repairs. This charge was applied to meet the higher costs of paying salaries and transporting tools and parts, but has caused no complaints.

Service Firm's Men Still Take Time To Learn

CHICAGO—By bringing to service and shop men of the Refrigeration Maintenance Corp. here the latest changes in design and adaptation of refrigeration equipment so they will be well posted, a series of meetings sponsored by the company is rating high in both attendance and interest shown, according to A. G. Weil, manager.

As Weil points out, "With the many types of equipment which we service as factory authorized agents and with the constant changes which are being made it is essential for competent workmen to have all new ideas and short cuts as they come along."

A typical meeting held recently and attended by 45 service men was devoted to a discussion of expansion valves. Frank Carter of the Detroit Lubricator Co., assisted by Lou Grauer, met with the men to go over the applications, functions, design,

and construction of valves, using for illustration and instruction purposes, equipment built by the Chicago company, Weil reports. In describing the demonstration, Weil says a one-third hp. air cooled condensing unit made especially for classroom work was used.

The unit has a glass port half way up the receiver tank and a large glass insert in the crankcase of the compressor and in the shell housing cover. In each of these three areas an electric light bulb is installed so that the operation of the compressor and the passage of refrigerant gas can be studied.

For use in this particular demonstration, the unit was connected to a panel board on which one-half inch Saran translucent plastic tubing had been installed with a thermostatic expansion valve. "Freon" refrigerant had been colored with red vegetable dye so that the passage of the oil and refrigerant throughout the entire system could be completely studied and analyzed, Weil explained. The panel board itself was made to turn allowing the coil to operate flooded, dry, or semi-flooded.

PENN ADVERTISES TO SUPPORT THE INDUSTRY

SHARPER EYES FOR THE ARMY AND NAVY

Winging deep into enemy territory, his plane unarmed and a camera lens his "bomb sight," the aerial photographer flies over his target...snaps a shutter...and high tails for home with his precious film.

Safely back at the base, the film goes into the laboratory for processing...emerges to furnish the map for the next day's raid—or to reveal the damage inflicted by some previous bombing smash. Cameras are the "eyes" of army and navy Intelligence, vital to the success of a single foray or a whole campaign.

Refrigeration and air conditioning play an important part in sharpening these "eyes." Accurate control of temperature and humidity are important...to keep films flat and pliable...to prevent fogging and streaking...to condition fixing baths and control re-actions in solutions.



Penn supplies automatic controls for these air conditioned photographic laboratories. We are proud that our experience and facilities have qualified us to furnish these instruments. Meeting these exacting requirements in accuracy and dependability, we are broadening an experience which will be reflected in future automatic control production for peace-time requirements. If you have a problem involving automatic control, consult our engineers, without obligation. *Penn Electric Switch Co., Goshen, Indiana.*

PENN
AUTOMATIC CONTROLS
FOR HEATING, REFRIGERATION, AIR CONDITIONING, ENGINES, PUMPS AND AIR COMPRESSORS

50% of Firms at Carrier's Forum Could Resume Production Day After Armistice

Re-conversion May Start Before War End 'Gradual' Re-employment Seen Likely

SYRACUSE, N. Y.—Representatives of 20 national manufacturers now engaged in war production met here in May at Carrier Corp.'s Second Post-war Forum to discuss plans and preparation now for postwar production.

Carrier's first round table to discuss this problem met five months ago, and each of the 15 companies invited sent a representative prepared to talk and to take active part in an open forum of opinion and ideas.

The results of the first conference, as briefed and sent to other leading industrial concerns, brought a wide and active interest. This second forum, composed of 20 more companies, then followed. Highlights of its discussions were broadcast over the Mutual network on May 7.

Half the representatives did believe that, if the necessary materials are available, their companies will be able to go into full peacetime production the day after the war ends.

On the same basis, all of them expect to be in production within the first six months. These estimates were backed by the facts of present production. Half of the manufacturers represented are doing from 75 to 100% of their war work in the same lines they manufacture in peacetime. Only

four of the companies represented have had to turn more than 75% of their normal facilities into a different kind of product.

The companies and their representatives follow: Allis-Chalmers Manufacturing Co., P. F. Bauer, manager, industrial dept.; American Airlines, W. L. McMillen, director, economic planning; American Telephone and Telegraph Co., G. L. Best, ass't. vice president; Bausch & Lomb Optical Co., M. C. Williamson, advertising manager; Bell and Howell Co., J. H. Booth, vice president; Dow Chemical Co., O. E. Grant, divisional sales manager, Dowmetal div.

Electrical Products Consolidated, Leon F. Moore, general sales manager; Erie Railroad Co., H. W. Von Willer, vice president; General Foods Corp., V. H. Pelz, director, sales research; B. F. Goodrich Co., C. O. Delong, manager, operations industrial products sales div.; Hercules Powder Co., Inc., Theodore Marvin, advertising manager.

International Nickel Co., Inc., E. A. Turner, ass't. sales manager, monel and rolled nickel dept.; Jam Handy Organization, George B. Finch, vice president; Metropolitan Life Insurance Co., E. H. Conarroe, director, man-

agement service, policyholders service bureau; Mutual Broadcasting System, Inc., James Mahoney, chief statistician; Oneida Limited, Harley H. Noyes, director, sales, advertising, and merchandise; Time-Life-Fortune, Bernard Barnes, ass't. to vice president, research; War Production Board, Dr. Vergil D. Reed, chief, industry and facilities; Westinghouse Electric and Manufacturing Co., T. J. Newcomb, sales manager, electric appliance div.; Carrier Corp., postwar planning group, J. M. Bickel, chairman, A. D. Hollenbeck and H. S. Woodruff.

Serious acceptance of the idea that constructive thinking and preparation must find us ready for the tremendous economic changeover from war to peace was evidenced in the response of the 20 companies asked to take part.

Five already have completed blueprints for procedures immediately to be begun when war ends. Four others have created executives to take this work in hand. Five are using outside organizations in setting up their program. None of them, according to off-the-record Carrier notes, have been satisfied merely to carry the idea through on paper.

Peace Date Uncertain

This in spite of the fact that there was no unity of opinion as to when the war would end. Only one fifth of those present believed Germany would

fall before January 1944. One third of them picked June 1944. The rest temporized at January 1945. Two thirds believed that Japan would fall some time between a year and 18 months after Germany.

The return to civilian production would begin gradually between the time of Germany's capitulation and that of Japan's final collapse, it was generally agreed. The percentage of conversion that can be reached by the time Japan too surrenders could not be estimated, it was conceded, because that will be dependent entirely upon the strategy developed by the Allied offensive.

The need for explanatory advertising was brought into the discussion, the practical necessity of informing the public of the problems that must be met, and of how manufacturers are moving to meet them. These considerations of public need and of industry's sense of responsibility will do much, it was pointed out, to build a public confidence that is especially needed when new products are being brought forth.

Employment First

The first responsibility of American business will be providing employment. Full employment the forum estimated at 55 million, a figure which war production brought to the country midway through 1942. This figure, while substantially below present levels, would include all men and women returning from the armed forces, all those who have shifted into war work from the service and luxury industries—a classification normally representing 60% of the total employment figure—and many women who will be able to and want to remain in industry.

Moreover, it is pointed out, the postwar picture probably will not include present war-exaggerated scales of hours and wages.

Full employment must be provided with a minimum of delay, they admitted. A gradual drop in employment must be anticipated after Germany bows out of the war, and a precipitous but temporary drop on the morning after total armistice. This latter drop should be checked within three months after the total cancellation of government contracts.

It will be the responsibility chiefly of the big manufacturers and the national industries, they believe, to bend the unemployment curve back toward normalcy.

Demobilization of the armed forces will reach only 75% in the first few months after the war, it was estimated, and it will take from one to two

years to re-absorb all of these. Wherever possible, the forum believed, government and industry will cooperate to balance the degree of release by one and absorption by the other.

The munitions industry itself, so representative of war will likely be dismantled only gradually over a period of several years.

Even now, largely because of organized labor's opposition, the government has paused in the outright cancellation of unneeded war goods, members of the forum brought out. Other projects were cited as possible brakes to unrestricted unemployment—the building of superhighways, of feeder roads to the Alcan highway, and the extensive rebuilding of railroads.

One of the representatives revealed that his company has set aside a considerable fund for the acquisition of plants that the government will abandon, and for fitting these to private production.

New Sales Forces

An investigation of the selling organizations of industry today, the forum suggested, would reveal that most former salesmen now in industry will not go back to selling after the war. Many of the salesmen still retained have been subsidized by their employers, or loaned to other firms. Others are now doing procurement, production, or job training. Some of the older expert salesmen will be available, discussion brought out, but emphasis will favor a great expansion in sales forces and a rigid program of re-education.

Members of the meeting favored the reduction of distribution costs. Sales executives who have been in closer contact with non-selling activities will be eager to put results of their research into selling and distribution departments. Unless national distribution proves to be an actual economy to the manufacturer and distributor, it will lose some of its old standing. "When a postwar sales manager looks at a map of the U. S. A.," as one representative put it, "he isn't going to be impressed by red pins stuck in every country crossroad if his balance sheets are splashed with red ink."

Eight members of the forum reported that they were having extreme difficulty in obtaining materials for present experimentation with postwar products. Opportunity for a practical consideration of postwar production has been limited by this factor. Manufacturers have had to concentrate

(Concluded on Page 9, Column 1)



GREAT OK'S from 100,000 little ok's grow

Flight test OK—the final of 100,000 ok's required on every B-24 Consolidated Liberator bomber built at the great Ford Willow Run plant. Precision parts in these bombers must be held to tolerances as close as one twenty-thousandth of an inch. Gages for inspecting these parts are checked against master gages in air-conditioned rooms to prevent variations due to temperature changes and corrosion from excess humidity. This is just one of the 17 applications of Westinghouse Air Conditioning and Industrial Refrigeration in six Ford plants.

After Victory, Westinghouse "Conditioning" will bring a "thousand" new-day benefits. Better products at lower cost, greater year 'round comfort—better living for all.

In meeting varied "conditioning" problems, Westinghouse draws upon years of experience. The exclusive hermetically-sealed compressor assures economy, dependability, long life. Inquiries are invited from producers of war materials and from postwar planners. Westinghouse Electric & Manufacturing Company, 713 Page Blvd., Springfield, Mass.



Tune in John Charles Thomas, Westinghouse Program, NBC, Sunday, at 2:30 P.M., E.W.T.

Westinghouse Air Conditioning

GEARED TO A THOUSAND WARTIME NEEDS

PORTABLE ENGINEERED COOLING FOR INDUSTRY



for
ZERO-WELDING

**REFRIGERATION
DISTRIBUTORS**
Here's a hot line
you can sell now!

Packaged portable
Refrigeration units
ready to install

by the originators of the
now widely demanded
ZERO-WELDING process

Complete range of
10 sizes—from 1/4 to 10
horsepower

Backed by regular
advertising in Welding
and Industrial Journals

Attractive distributor
franchise.
Large profit potential

**FROSTRODE
PRODUCTS**

19003 John R Detroit 3, U.S.A.

Twenty Companies at Carrier Forum Discuss Postwar Production Outlook

(Concluded from Page 8, Column 5) their main efforts upon perfection of products for direct war use.

But producers of consumer durable goods have been able to go ahead with considerable research that will be important after the war. The government often will release materials for the building and testing of these experimental products, and many have proved helpful now in the war effort.

The problem of transportation entered into the discussion of possible reductions in distribution costs. The railroads figure chiefly in transporting goods, hauling 336 billion ton-miles in 1939 (about 62% of the national freight load), and in 1942 increasing it to 640 billion ton-miles (about 67% of the total load).

Railroad Problems

Doing twice their normal job at present, railroads have not been able to maintain efficient levels of material and labor. Their first postwar job, the forum estimated, will be to rebuild their beds and rolling stock. It will go ahead much faster than it did after the last war, they believed.

Experiments in the construction of power equipment and stock are being successfully carried on with lightweight metals to reduce dead-weight loads. This however introduces other problems: What will be locations of the new lightweight metal industries? How far will the decentralization of industry go? How extensive is the future of other transportation means?

The light metal suppliers seem confident that they can produce in quantity for both capital and consumer merchandise, but they warned that the development of lightweight metals must be extensive before production

in quantity can be relied upon. The present production of aluminum and magnesium together is about 1,300,000 tons a year, against 100 million tons of steel.

Research is now under way on the problems of fabrication and of discovering new uses for lightweight metal products in peacetime. Technical men have been sent out to gather information on the locations of factories, the customer of these companies, their future sales outlook, and sales manpower requirements. Distributing organizations are cooperating.

Airlines are pushing the use of lightweight metals and plastics in the design and manufacture of planes. It is their belief that the speedy shipment of these goods by air justify higher freight costs. Deliveries would become more frequent, in smaller lots, which would reduce the inventories of foreign importers. Airlines expect their greatest business to be in the classified transportation of travelers.

South American Market

Consideration of these matters turned the discussion to foreign trade and South America. Although the South American people are greatly interested in our plans for peacetime, they have no taste for breezy American propaganda. They desire to be considered year-round good customers to our trade, and not prospects turned up as a last resort. Some at the forum agreed that the reason for this treatment on our part has been unreasonable tariffs set up by Latin American political policies.

Other members expressed their belief that South American business men

will finally level tariff barriers in an effort for better distribution of products and a higher standard of living. And that when that comes we should adopt a reciprocal trade policy. Fear that history will repeat itself after the war, as it did in 1918 when the rise in income of other countries was far below our own, probably will stimulate Allied measures to bring up the standard of living abroad.

There was some argument upon the question of advertising that builds up public expectation for postwar products. Some contended that publicity which incites the buying urge is good for postwar trade. But everyone was in accord that industry must be on its guard against flooding the consumer market with inferior products made from unfamiliar basic supplies in the hands of new and unethical fabricators, such as happened after the last war.

Speaking for his firm, one of the representatives stated, postwar planning meant getting into immediate production to supply its dealers with a line of products that would sell at reasonable prices and offer low service costs.

Attention then turned to the prospect of brand new industries which might develop as did the automobile and radio industries of the 1920's. Production of an improved, moderately priced helicopter was regarded as a means to accelerate short-distance travel, and one that might become revolutionary in scope. Prefabricated homes and furnishings were described as dark-horse possibilities with not too much weight because of the material hostility of the building trades.

Capital equipment will be freshly adapted to road expansion and rail rehabilitation, the forum believed. Agriculture and food processing methods will demand more efficient machinery. Jeeps and war tanks will be modified to uses pertinent in farming and road construction.

Frozen Foods

Food freezing and food locker stor-

age equipment may find a greatly widened market. Use of improved films, photographic and motion picture equipment in educational fields is expected. Synthetic rubber and plastic products will be in wide circulation, and newly developed fuels which are still in the making.

Inter-collaboration of diversified business and industries was strongly indicated by the representation of so many types of organizations which met at the two Carrier Corporation forums.

This trend was reflected again in the study made by several airlines, upon request by a Governmental agency, of the different phases of their industry. A similar project is now under way in the rubber industry. Results of these studies will be pooled for future information reference.

A new standard design to eliminate a bottleneck in the turbine industry is being discussed by the turbine manufacturers. A market research job was undertaken by another organization to find non-competing lines of other manufacturers for its own distributors. Many small business men, hard pressed by priorities, are still doing business as a result.

Although the emergency of the war has stimulated and made necessary cooperation of this kind, it is strongly indicated that such teamwork will continue after the war.

According to a report of the National Resources Planning Board, the government will take considerable part. However, one analyst declared that it is unlikely that a government-managed economy will emerge after the war. "If business vigorously discharges its rights and responsibilities," he said, "it is unlikely that these will be pre-empted by government."

Another speaker stated, "If business is honest, it will admit that the stagnation which produced the economic illness of the 1930's was the result of its own ineptness. We had to swallow the New Deal as we would a

distasteful dose of castor oil. There was no other way."

With the disappearance of the balance between production, distribution, and selling, full employment, opportunity, and security were not provided for. The forum insisted that there can be no security without opportunity. The New Deal appeared as a stopgap in the public security, but not as established opportunity because the jobs provided were unproductive. This resulted in discord and cross purposes, and was not a real cure for the country's economic headache.

War the Common Cause

The war, then, was the common cause which finally brought government and business onto a common plane. Business men are encouraged by an increasing harmony and mutual understanding between themselves and government. The forum agreed that if business and government each will perform its job in its own sphere, industry can and will win the peace, by obtaining the objective of all post-war planning—full employment under free enterprise.

These were some of the viewpoints presented and some of the decisions agreed upon. Perhaps the most fundamental point made by the conference as a whole was this: The foundation of postwar trade will be not the recent modern marvels of production, but the increased efficiency and economy of present well-known and established goods.

The importance and significance of the conference was the spontaneity and the completeness of response it drew, both in this and the January forum, from the companies invited to attend and from industry as a whole.

Since May 7, 45 more companies have written to Carrier asking to be notified and, if possible, included, when the next forum is called.

IMPERIAL Data Sheets

1. HANDLING TUBING

• This is the first of a series of Imperial data sheets that will be published from time to time in the form of advertisements.

The material which will deal mainly with tubing connection practice has purposely been simplified so that the new man on service and installation work can easily understand it. However the experience gained in the handling of the

many Imperial tube bending contests indicated that even the old timers would find something of interest in this basic information on how to connect up tubing.

It is therefore presented by Imperial as a small contribution toward the problem of handling service work when both materials and manpower for the refrigeration industry have reached a dangerously low point.

COPPER tubing as it is furnished from the mill is bright on the outside and very smooth and bright on the inside. It is usually packed in a tight fitting box or wrapped so that the atmosphere will not cause it to corrode.

If copper tubing is kept on a shelf for a long period of time it will be found that it has become quite hard. Every time a piece of copper tubing is bent it will become harder and if it has been handled many times, it will probably be necessary to anneal it before it can be used. This is particularly true if it is necessary to bend it to some desired shape or if the ends are to be flared without splitting.

Annealing Copper Tubing

In annealing copper tubing the process is just the opposite to that in steel. The copper tubing is heated to a dull red heat and cooled in water. It can be cooled by the air cooling process, but water cooling has a tendency to brighten the copper and to remove some of the oxidation that may occur during the process of annealing.

In annealing it must be remembered that copper melts at approximately 1900° Fahrenheit so that if an oxy-acetylene torch, or if a very hot flame is used, care must be taken or a hole will be burned in the tubing.

Annealing Aluminum Tubing

While aluminum tubing is not used as frequently as copper tubing it can be used in many places where copper is not applicable.

It is usually soft and easy to work and seldom hardens like copper tubing. However, aluminum tubing can be secured in various grades of hardness.

To anneal aluminum tubing use the same process as annealing copper tubing. Extreme care must be taken, however, as aluminum melts at a much lower temperature than copper, namely at approximately 1217° F. If the flame is kept on the tubing too long the workman may be surprised to see the tube completely collapse.

Uncoil the Tubing

Tubing is usually coiled so that before using it is necessary that it be straightened out. Before straightening determine the amount of tubing that is required. Place the coil on a bench or on the floor and hold the end of the tubing with one hand and with the other hand unroll the coil.

You should not try to uncoil the tubing by pulling it out sideways from the coil in its spiral form as this would put a twist in the tubing, have a tendency to throw it out of round and harden it. It should always be remembered that working tubing in any way will have a tendency to harden it.

How to Straighten Tubing

Even after tubing is carefully uncoiled it is not often very straight and it is necessary to use other methods to take out kinks in the tubing. Some of the methods used are to lay the tubing on a smooth floor or bench and use a board flatwise, striking the high spots of the tubing down on the floor or bench. Care must be taken that the tubing is not struck too hard so that flat spots will be formed. It must be remembered that soft tubing is very easily dented and if dented the tubing may collapse at the dent when being bent.

Another method of straightening long lengths is to slap it against the floor, turning the tubing as the slapping operation continues. When one man does this it is necessary to fasten the tubing at one end. The job is simplified when two men

can handle the straightening of a long piece by the slapping method.

Cutting the Tubing

There are several well known methods of cutting tubing and probably the oldest and most commonly known is to saw it with a hack saw. The objection to sawing with a hack saw is that it is hard to saw the tubing off straight and the saw cuttings get into the inside of the tubing and sometimes cause trouble.

Another method, particularly on small tubing, is to nick it all the way around with a file and then break it off. The objection to this, of course, is the fact that a ragged edge is produced which must be trimmed with a file so that the end is square to make a good flare or to make up properly with any type of fitting.

The best way to cut tubing of any kind is by the use of a tube cutter. There are several well known tube cutters and most of them very satisfactory. However, the best type is the one that has two rollers on which the tubing rolls and the cutting wheel does the cutting. This tube cutter is fed gradually into the tube while the tube cutter is revolved around the tube. This results in a right angle cut which has no ragged edges and if properly made, very little burr on the inside of the tube. If the tube cutter is fed too fast, a burr will be produced on the inside of the tube.

In cutting aluminum or other soft tubing it is very essential that the tube cutter be fed slowly because the softer the tubing the more the tendency to throw a burr on the inside of the tubing, and the more necessary it is that the burr be removed before any flaring is to be done.

Another advantage about cutting with a tube cutter is that it makes a small chamfer on the outside of the tube which facilitates making up a solder joint or a compression type of joint, inasmuch as it forms a lead which makes it easy to put the tubing into the fitting.

One of the most recent developments in tubing cutters is the flare groove. On tubing cutters with rollers a groove is cut in both rollers so that if you desire to remove the flare from the

IMPERIAL Data Sheets

2. TUBE CUTTING



end of a piece of tubing the flare rests in the groove and the cutter will cut at the bottom of the flare.

Sometimes the flare on a piece of tubing will crack. The ability to cut off this flare, close to the flare, may make it possible to refire the tubing and use it again. This is particularly important where a piece of tubing has been incorrectly cut for length and it is desired to cut off the flare with minimum loss of length.

A good tube cutter is an essential part of a service engineer's kit and it should be properly cared for and not thrown around. If the tube cutter is sprung out of shape the wheel will probably not track properly around the tubing and will cut a thread instead of staying in the same groove. This of course ruins the action of the tube cutter.

On heavy tubing, it is sometimes advisable to use a hack saw and it is good practice to use a sawing vice to hold the tubing. These vises are made so that the tubing is clamped in them and the saw is guided in a slot so that a perfectly square cut will be made. In the larger sizes of tubing it is very easy to see any chips that are deposited on the inside of the tube and it is therefore not objectionable to use a hack saw for cutting the tubing.

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*Air Conditioning and
Refrigeration Products*

Discount Trends on Sales to Government Seen In Price Order

WASHINGTON, D. C.—Indications of possible future trends toward mandatory discounts on sales of electrical appliances to government agencies are seen in an amendment to Maximum Price Regulation No. 11. Gist of the statement, filed as Amendment 9, gives the following discount percentages on Federal agency purchases of new household vacuum cleaners and their attachments:

Number of Units	Discounts
1-5 inclusive	20%
6-24 inclusive	33 1/3 %
25-999 inclusive	40%
1,000 and over	53%

A postscript modification stipulated that any order requiring amounts to be shipped at different times or to different places must, for discount claims, be considered separate orders.

Chris Christensen Is New Celotex Officer

CHICAGO.—Chris L. Christensen, who recently resigned as dean of the University of Wisconsin College of Agriculture, has accepted a vice presidency with the Celotex Corp., building material manufacturer.

Christensen will take charge of the corporation's post-war development program, and will also head its agricultural interests.

To Hold That Good Coffee Aroma, Keep The Beans Cool!

DETROIT.—If you like your coffee fresh and full of its original flavor and aroma, keep the ground or unground coffee beans cool—in your refrigerator.

That's the advice of Ira Reindel, refrigeration engineer for the Norge division of Borg-Warner Corp.

"Ground coffee, especially, does not keep too well," Mr. Reindel explained. "It should be kept cool. The reason is that the ingredients in coffee—aroma, flavor, taste—are soluble. They evaporate. Heat drives off the vapors. The best way is to place the package or contents in a glass jar and keep the jar covered and cool in the refrigerator."

The ground coffee usually is kept on kitchen or pantry shelves where high temperatures quickly vaporize or evaporate the aroma, particularly during the hot summer months, he pointed out.

Gibson-Built Gliders In Greenville Show

GREENVILLE, Mich.—Army air forces' gliders manufactured by the Gibson Refrigerator Co. were to be one of the principal attractions at a field day held here in honor of Roane Waring, national commander of the American Legion, Sunday, July 11.

Troops were to stage a sample "Invasion," using the CG-4 glider being turned out by the Gibson company.

Laundry Workers Rated as 'Essential'

WASHINGTON, D. C.—The nation's commercial laundries, most of which are faced with critical manpower shortages, have been extended aid by the War Manpower Commission and the Office of Civilian Requirements of the War Production Board.

Regional directors of WMC have been authorized to classify those laundries meeting the required standards as "locally needed" and therefore eligible for the same preferential standing allotted essential war industries throughout the country.

Laundries applying for this rating are required to have observed and followed standards agreed upon by OCR and WMC. The requirements deal mainly with economies in transportation and in the items handled, and with efficiencies in the use of available manpower and mechanical facilities. Occupational deferment for laundry workers under the Selective Service Act is not included.

Active recognition of the problem has been won through the efforts of industrial representatives all over the country. Members of the Washer and Ironer Manufacturers Assn. recently were polled to ascertain how much of an increase could be made in the production of laundry equipment without interfering with war work, and the plight of commercial laundries in overcrowded areas, where domestic washing machines could substantially lighten the load, has become recognized in war production cities everywhere.

Refrigerant Stand at Store's Front Cuts Employees' Mileage, Pleases Customers



Jim Haviland, of J. M. Oberc, Inc., Detroit refrigeration supply jobber, charges a refrigerant drum with the new system layout recently installed at the Oberc store. Moved to the sales counter from the back of the store, the system has proved a manpower saver, and gives customers an opportunity to check visually the weight of refrigerant charged.

DETROIT—Faster and better service to the customer, and more efficient use of employee's time are the results of a change in the refrigerant drum-charging system recently made by J. M. Oberc, Detroit jobber.

Until recently, the entire charging system, including manifolds, scales and other equipment were located at the back of Mr. Oberc's store, some 70 feet from the sales counter and out of sight of the customers. Such a setup required that the employee handling the refrigerant transfer leave the sales area in the store and spend several minutes at the charg-

ing system waiting for the refrigerant drum to be filled.

Moving the charging portion of the system to the sales counter at the front of the store has eliminated both several miles of walking each week for employees, and valuable time, which can now be used for waiting on other customers while the drum is being charged.

In addition, with the scale, drum, charging lines, etc. in full view of the customer, doubt as to the actual weight of refrigerant transferred has been eliminated.

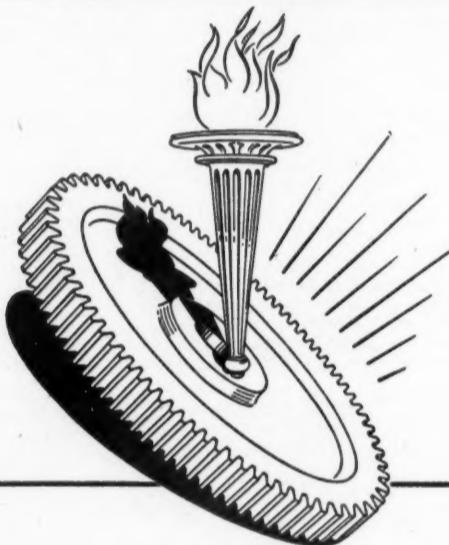
Revised Government Manual Is Made Available

WASHINGTON, D. C.—The summer edition of the United States Government Manual, a 707-page reference book on the creation and organization, functions and activities of the Federal Departments and Agencies, is now available.

The edition contains changes through May 15, statements on all branches of the government, a list of principal officials, a separate sec-

tion on the emergency war agencies, and an appendix on agencies abolished, transferred, or consolidated since 1933 are included in the Manual.

The Manual may be purchased from the Superintendent of Documents, Government Printing Office, Washington, D. C., or at the U. S. Information Center, 1400 Pennsylvania Ave., N. W. Single copies \$1.



Business Must Be Free—For Free People

★ We in this country have enjoyed the "Four Freedoms" for so long that perhaps we forget the existence of these Freedoms—and their maintenance through the years—has been largely the economic result of a Free Enterprise System.

When business is free to plan ahead, to dare, and to risk with faith in the future—with faith in the possibility of a reasonable profit, all the people benefit! When the imagination and inventive genius of industry can forge ahead with new production methods, develop new products, and invade new markets—then mass employment and the Four Freedoms are assured.

Free Enterprise, spurred on by the Profit Motive, and operating under our traditional American Way of Life, has constantly raised the living standards

of millions, created new jobs, kept wages and salaries rising, and cut the cost to the consumer of goods produced.

No dictator ever arose in a healthy, prosperous civilian economy. None ever will. Only industrial stagnation breeds those unhealthy forces of discontent that alone lead men to the destruction of their own Four Freedoms.

Industrial progress promotes Freedom, when industry in turn is free of hampering government regimentation. Government must encourage industrial progress, not handicap its development. Repression is foreign to the conception of free people. And, because appreciation comes only from knowledge and understanding, we in Industry must explain these benefits of Free Enterprise to those who may not understand them today.



CHICAGO SEAL for COLDSPOT

The news is getting round about Chicago's new replacement seal for Coldspots . . . how easily you install it . . . its triple protection against leakage . . . and its self-adjusting sleeve lock. One trial will convince you that Chicago has rung the bell again with the right replacement seal for Coldspots.

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Commercial Refrigeration and Air Conditioning Equipment



Carrier Corp. Relocates Duties of Many Personnel In Its Marketing Division

'Liaison' Managers Are Named For Eastern and Central Regions; Field Force Appointments Made

SYRACUSE, N. Y.—In order to bring organization efficiency to a peak, a reallocation of duties in the Marketing Division of the Carrier Corp., has been effected, E. T. Murphy, senior vice president in charge of the division, announces.

The following new assignments have been made: L. L. Lewis is designated as Technical Adviser to the Marketing Division in the air conditioning field; W. F. Jones is Technical Adviser to the Marketing Division in the centrifugal refrigeration field. O. W. Bynum, formerly in charge of the southern region, is transferred to the home office, and will serve as assistant manager of the Marketing Division. Reporting directly to Mr. Bynum will be the product managers, the regional agents, the business office of the Marketing Division, and construction and service. The southern region has been eliminated, and its territory divided between eastern and central regions.

Other new assignments include the appointment of liaison men at the home office. M. T. Firestone will represent the eastern region, and R. R. McCumber will represent the central region.

Mr. Murphy said, in regard to the two appointments, "These men will serve as the representatives of the assigned regions and will act as the central clearing point between their regions and the activities located in the home office, whether factory, engineering or business office. They will take care of the interests of the field offices and will serve to expedite field requests for information and action until final disposition is made."

For the central region, J. A. Gazelle has been appointed regional dealer manager, with headquarters in Chicago. A. P. Shanklin, vice president in charge of the central region, is his immediate superior.

Mr. Gazelle, well known for his dealer supervisory activities in the air conditioning and electrical industries, has traveled all parts of the country in line with his work. During the past few years, he has been dealer supervisor in the southeastern district with headquarters in the Atlanta office.

A staff of four men will assist Mr. Gazelle: J. E. Field, of the Chicago office, will supervise dealer service on commercial refrigeration applications; R. F. McGregor will continue in the Cincinnati district; W. F. Peine, of long experience in the southwest, will remain at the Dallas office; and M. B. Goddard, supervisor of installation in the Chicago district, will serve the central district in construction and service work.

H. C. Hahn will continue to handle dealer supervisory responsibilities for

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Estimate 4-6 Months To 'Reconvert' To Manufacture of Refrigerators

Factors In 'Speed of Reconversion' Are Many

NEW YORK CITY—Reconversion to peacetime manufacture of refrigerators will require from four to six months, business sources here estimate, calculating a period of two to three months for a change-over in the radio line, and five to nine months for automobile production to resume.

Assistants to Mr. Hahn in the Philadelphia District, and will take over supervision of the Atlanta district as well. This new territory includes the seaboard states from Pennsylvania to Florida. Mr. Hahn has long experience as executive in the distribution of household equipment before joining Carrier.

Assistants to Mr. Hahn in the Philadelphia District will be D. B. Arnold and R. H. Smiles. Both have had a number of years' experience with Carrier; Mr. Arnold in supervising the sale and application of commercial refrigeration equipment, and Mr. Smiles in assisting dealers in engineering problems.

C. N. Witmer, formerly of the southwestern district, will continue supervision in the Atlanta district.

sentials of war. Others simply started up their military contract work in other quarters leaving pre-war production lines untouched. Resumption of civilian output in these plants will be gauged only by the flow of materials into the plant.

Fluidity of reconversion in every field will be proportionate to the quantity of production lines which remained intact throughout wartime operations, the estimates indicate. While reconversion will not be performed with ease in all plants, it has been revealed that many more lines stand ready to function than was generally believed.

In many cases, it is known, factories were stripped of equipment which was replaced with machinery necessary in turning out the es-

duction in case Germany is defeated before Japan. Another one is the natural termination of war contracts and the manner in which the military services will handle them. This phase could involve the relation between contractors and sub-contractors. For example, as plane contracts taper off, it may be possible to gradually withdraw subcontracts from smaller plants allowing them to return to civilian production and give the sub-contracts back to the prime contractors. This would mean in many instances transfers of machinery as well.

Still another factor develops from the redesigning of products. While the majority of auto, appliance, and radio industries expect to work on 1942 models to fill a demanding market and to use pre-war tools, jigs, dies, etc., in the event of a drawn-out war, it is believed that men and materials will be released into a growing field of experimentation. Time spent in perfecting new designs, it is understood, would necessarily lengthen the time required for reconversion and it is unlikely that producers will tool up for new designs before the war ends.

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● Copper Coil Headers with integral sockets for brazing lateral tubes offers a modern and economical approach to any manifold problem. Designs can be modified to meet your special requirements.

Copper Pipe Coils are manufactured in a multitude of shapes and sizes. Smooth, round bends and exact dimensions are characteristic of Mueller Brass Co. Coils. We make our own copper tubing—exactly the right grade as specified for the particular part.

We specialize in tubular assemblies, wrought copper solder type fittings and return bends. Our equipment is most modern and adapted to low cost high quality production.

All tools for fabricating, forming and otherwise processing tubing are made in our own tool department—the best possible tools for the job are thus obtained with the least possible delay.

If you have requirements for specially fabricated copper tubing, drop us a line. If you have a problem, our engineers will be glad to help.

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Air Conditioning & REFRIGERATION NEWS

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Electric Refrigeration News

F. M. COCKRELL, Founder

Published Every Monday by
BUSINESS NEWS PUBLISHING CO.
5229 Cass Ave., Detroit, Mich.
Telephone Columbia 4242

Subscription Rates
U. S. and Possessions, Canada, and all countries
in the Pan-American Postal Union: \$4.00 per year;
2 years for \$7.00. All other foreign countries: \$6.00
per year. Single copy price, 20 cents. Ten or
more copies, 15 cents each; 50 or more copies,
10 cents each. Send remittance with order.

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VOLUME 39, NO. 12, SERIAL NO. 748
JULY 19, 1943
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No Let Up In Production

SOME of our friends persist in worrying over the nation's obvious enormous stockpiles of war materials, both here and abroad. They fear heavy contract cancellations, and abrupt cessation of production on many items.

So long as our shipping situation was in such jeopardy there might have been some ground for such fears. Now, happily, our shipping situation is enormously better.

Opening of the Mediterranean route virtually added to our shipping capacity about all we lost to the submarines last year.

And, we appear to have licked the submarine. How this has been done will some day be an amazing story. A couple of secret devices should get much of the credit.

It is true that there is a rapid obsolescence of weapons in modern warfare, particularly when so inventive a nation as the United States gets into high gear on war production. That's all to the good, of course, in winning the war. Inevitably, however, it will result in acres and acres of weapons and devices which may never be used.

HIGH LEVEL PRODUCTION FOR NEXT 6 MONTHS

As matters stand now, war industry can expect to continue high level production for at least another five or six months before any general tapering-off can be allowed, and even then the tapering-off will be slow. (That is, of course, if the Germans don't throw in the towel sooner than our High Command expects).

After that will come a new type of war order, one which all manufacturers should prepare for right now. This new type of war order will be for occupation equipment.

The United Nations High Command plans and hopes to conquer quite a bit of territory during the remainder of

They'll Do It Every Time
By Jimmy Hatlo



the year. These areas will in the course of things be devastated. We shall have to rehabilitate them. This will call for construction machinery, dock equipment, power machinery, sanitation equipment, plumbing supplies, farm machinery, housing, and nearly everything which will be required in rebuilding cities and their supporting countryside.

REFRIGERATION WILL BE NEEDED FOR RECONSTRUCTION

Mark this well: Refrigeration equipment will be needed badly, and in considerable quantities. The people in charge of rehabilitation may not know this yet, but they will as soon as they get into their rehabilitating programs.

(That situation, unfortunately, seems ever recurring. Our military procurement officials did not at first realize how much they would need refrigeration equipment. Nor did the WPB at first realize how much civilians depend on refrigeration. Apparently the need has to explode in the faces of the planners. Refrigeration is indeed a "hidden service.")

Thus we may run into the paradox that refrigeration equipment manufacturers will be called upon to resume manufacture of civilian products, and yet such products may still be unavailable to American civilians. They will be needed desperately abroad.

This is all the more reason why those who are striving for a better situation on civilian refrigeration supply for the American home front should be heard now. The competition for refrigeration equipment in 1944 may be terrific, and we had better plan now to provide at least a minimum supply for the people who live in the United States of America.

LETTERS

REFRIGERATION SITUATION IN NEW ZEALAND

Charles Begg & Company, Ltd.
The Musical and Electrical Centre
43 Princes Street
Dunedin, N. Z.

Editor:

I received some time ago your letter of January 19th, and have to apologize for delay in sending forward my reply. My answers to the questions you ask, the answers being numbered to correspond with your questions, are as follows:

1. Imports of refrigerators from the United States of America are controlled completely at this end by our government. No licenses at all are being issued for domestic refrigerator units. Commercial refrigerator units can be imported under special circumstances on the recommendation from a government special Commercial Refrigerator Committee. No licenses are granted individual firms for the importation of these units, the government doing the importing themselves.

These units when they arrive here are used for urgent and essential institutions necessary for the war effort, or for essential trades and industries in this country. The importation of parts for the service of domestic and commercial refrigerators is allowed, but we understand that there are difficulties in the obtaining of such parts at your end, as we, ourselves, have not applied for any license for the importation of parts, we cannot give you a very definite statement covering this part of the import situation.

There is undoubtedly a great demand in New Zealand for domestic and commercial refrigerators and so far as we know there are no domestic refrigerators left unsold in this market. We have not any estimates of 1943 requirements of refrigerator units or parts, but this would be large. We have no doubt that if economic conditions after the war are stable the demand in this country for refrigerators will show a very substantial increase over what it was before the war.

2. Refrigerator cabinets for both domestic and commercial refrigerators have been manufactured in New Zealand for the past few years, as a result of our Government's import control policy. It originally had nothing whatever to do with the war. It has been the practice of refrigerator importers to import units only, and have the cabinets made here. Cabinets are made in New Zealand for domestic refrigerators by General Motors (N.Z.) Ltd. of Petone, Wellington, and by Alex Harvey & Sons, Ltd., of Auckland. Commercial refrigerator cabinets are made by these firms, and also by Messrs. J. McAlpine, Ltd., Emily Place, Auckland, Messrs. A. W. MacDonald of Weld Street, Freeman's Bay, Auckland, and by G. E. Patton, Ltd., Barbadoes Street, Christchurch. A small amount of cabinet hardware is being made in New Zealand, we understand by General Motors.

3. There is a big shortage of refrigerator mechanics in New Zealand, owing to the call-up of our men for the war. This shortage is shown in all business, and trades in this country, and so far as refrigerators are concerned it has greatly added to the problems of firms selling and servicing refrigerators.

4. Refrigerator sales organizations are faring very badly as there are no household refrigerators, and the supply of commercial refrigerators is very strictly limited. There have not been many firms in this country specializing exclusively in refrigerators. Many firms, such as ours, have handled other electrical appliances including radio, some of which are still available, though only to a limited extent. We see no worthwhile prospects in the refrigerator trade until the war is over, as refrigerator sales have dwindled, so of course, have profits.

5. We realize that the winning of the war is such a gigantic task, that business interests have to be subordinated thereto. Our government at this end are controlling orders placed for essential lines such as parts for replacement purposes, and such commercial refrigerators as may be needed for the war effort of the country. If at your end as little delay as possible can be arranged for the despatch of such orders as are put through by our government, this would seem to be the greatest help we could expect, and all we would ask for.

We greatly appreciate the spirit behind your

letter, and your desire to help us in New Zealand in the present crisis.

In the past our tariff has been revenue producing, as much, or more than, a tariff to protect industry, and we cannot say how any New Zealand government would view a general reduction in tariffs. Domestic refrigerators are still considered, unfortunately, somewhat of a luxury, by the government, and it may be difficult to persuade any New Zealand government to reduce the duty, though it does seem a pity when refrigerators could bestow so many benefits on their owners, that nothing can be done in this country in the way of reviewing tariff, and that the uneconomic manufacture of parts here should put the price up, and so deprive many potential owners of the benefits they would otherwise enjoy.

Charles E. Begg, General Manager

FOOD PRESERVATION AND SERVICE MEN

Utilities Engineering Institute
1314 Belden Avenue
Chicago, Illinois

Editor:

My compliments to you for the July 5 issue of AIR CONDITIONING & REFRIGERATION NEWS.

Of particular interest is the efficient manner in which you took up cudgels in behalf of the Refrigeration and Air Conditioning industry. This of course has been your chosen duty for many years but at this time and moment the sad truth hurts and an intimate knowledge of the industry is needed to accomplish any progress.

Your many accomplishments in behalf of "Food Preservation" are not only a definite contribution to the protection of the home front but also a most important aid to our fighting forces.

I am pleased to report that we are already experiencing greatly increased interest from the general public in regard to our training program for Refrigeration and Air Conditioning. Recently one of the important manufacturers of low temperature units has requested Utilities Engineering Institute to supply them with at least three thousand U.E.I. graduates when hostilities have ceased, to further their sales and service expansion program. Recognition of this sort is very gratifying and we shall make every effort to deserve this confidence.

Best wishes.

W. H. Hoehne, Vice President

ARGENTINIAN SEEKS EXPORT CONNECTIONS

J. Montserrat Ollie
Importacion—Exportacion
Buenos Aires

Ecuador 224
U. T. 62—(Mitre) 1798
Casilla de Correos 2765

Editor:

I beg to inform you that through the Chase National Bank in Detroit, I have sent you US\$4.00, to renew one year subscription of the AIR CONDITIONING & REFRIGERATION NEWS. This transference has been sent today by air mail, and I hope you will receive it in due time.

I take the advantage to express you that I should like to enter in commercial relations with any good and important company to do business with Argentine and I shall be very much appreciated if you can help me in this regard.

Thanking you in anticipation for all what you can do for me and offering my services for all that I can do for you.

Jose Montserrat Ollie

Inside Dope

By George F. Taubeneck

(Concluded from Page 1, Column 1)
missar" to Marvin Jones. This group, all said to be "Frankfurter men," report to Harry Hopkins. Complicated, isn't it?

There is nothing especially sinister about a "palace guard," because such a group of anonymous wire-pullers has appeared often in our government, as well as in most others. Harding, you may recall, had his "kitchen cabinet."

The size of it is that the so-called "czars" are in many instances mere front men—politicians who are relied upon to persuade other administrators, and Congress, to "go along" with the thinking which emanates from the inner circle.

Harry Hopkins is the real power-behind-the-throne in our government today. Jimmy Byrnes, the so-called Assistant President in Charge of the Home Front, is a negotiator, rather than a framer of policy.

The 'Line' for 1944

President Roosevelt may have been surprised by the Wallace-Jones public feud, and then again he may not have been. Most astute politician of our times, the President knows that the voters are sore from Georgia to Oregon about the home front mess.

His angle is to divorce himself entirely from the rest of the government. He is busy winning the war—which, of course, is true. And his "line for 1944" will be that others in Washington are responsible for all the home-front mistakes.

"Everybody is out-of-step but Washington" is to be his official theme song. "The people outside the nation understand the war—they're all right, and doing their bit. It's Washington that's mixed up."

Watch for this "line for 1944" when campaign time draws nearer. It has already been mentioned lightly.

A Lot of Books

Here at the NEWS we run a little book business on the side, publishing technical books in the field of refrigeration and air conditioning, and service manuals.

They have been most successful, as such things go, and we have been proud of the operation. Recently we have supplied more than a hundred sets to the United States Coast Guard Academy, to be used as textbooks.

Nevertheless, it has been demonstrated recently that we're pretty small potatoes in the book business. Since the middle of March Frigidaire has put out more than 5,000,000 books—the one offered in their current advertising record.

That's about 10 times as many copies as Willkie's record-breaking "One World" has sold. It's staggering. We are not a bit jealous, however. Inasmuch as these books will help American housewives make the best use of their invaluable refrigerators during the present food-shortage era, they are performing a most valuable service.

Home Refrigerators

In a recent issue of the Detroit Times the following significant material appeared in the War Problem Clinic Department:

"Beset by perplexing problems occasioned by rationing and difficulty in obtaining various household appliances placed on priority, several housewives have written to the War Problems Clinic for help in these matters.

"In some cases, such as the one presented in the following letter, families are faced with the prospect of being unable to keep perishable foods for any length of time because of their inability to obtain proper refrigeration.

"During these days when diet is such an important factor in maintaining a high health standard for

the whole country, situations like these must be alleviated.

"I have been trying to buy a refrigerator, but because we have form and when the refrigerators are lumber for cash a little at a time, it is not on priority. The ice box I bought in 1927 is irreparable.

"We have three children and milk is delivered every other day and ice twice a week in this locality. Our meat is spoiling and milk souring. We have our own garden produce to keep.

"My husband and I both work at defense jobs, but unless I am able to find some way to keep our food, I will have to quit my work so as to make better use of what we have. Can you suggest a way to get a refrigerator?"

"Dear Mrs. M. C.:

"We have the following information from the War Production Board: If home has been built since April 7, 1942, you should have a builder's authorization which states that family may purchase a refrigerator. At the present time no priorities are being given and refrigerators have not been made for 16 months.

"There were some released a month ago and they were sold in two

days. There are a few left but they will be sold to hospitals, Red Cross, etc., where they will be used for the good of a group instead of an individual.

"The only way a family can secure a refrigerator is by having a doctor's certificate stating that some one in the family has an incurable disease or a serious illness.

Definitions

"A conference is a group of men who individually can do nothing, but as a group can meet and decide that nothing can be done.

"A statistician is a man who draws a mathematically precise line from an unwarranted assumption to a foregone conclusion.

"A professor is a man whose job it is to tell students how to solve the problems of life which he himself has tried to avoid by becoming a professor.

"A consultant is a man who knows less about your business than you do and gets paid more for telling you how to run it than you could possibly make out of it even if you ran it right instead of the way he told you.

"A specialist is a man who concentrates more and more on less and less.

"An optimist thinks the future is uncertain.

"A pessimist thinks the optimist is right.

"An economist is a man who can make a simple subject complex, a complex subject simple; in other words an economist is simple simple."

These definitions are now in high favor around the industry, and dozens of men are carrying them around in wallets, showing them on the slightest provocation.

Who originated them nobody seems to know, but we salute him.

Subscribers, knowing our intense dissatisfaction with current statisticians and statistical methods (as found in Washington), can well imagine our high glee over that definition of a statistician. Let's read it again—it's so true:

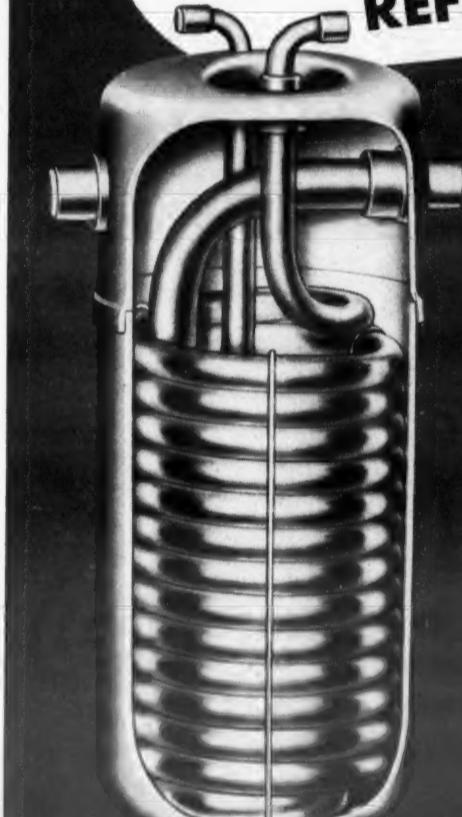
"A statistician is a man who draws a mathematically precise line from an unwarranted assumption to a foregone conclusion."

Too often today statistics are either: (1) worthless and meaningless, or (2) manipulated to support a controversial position.

Is there a statistician in the house who wants to argue the point?

Temprite ACCUMULATOR-INTERCHANGER

Improves OPERATION OF LOW TEMPERATURE REFRIGERATION EQUIPMENT



THE Temprite accumulator-interchanger is designed to improve the operation of low temperature refrigeration equipment by:

1 Permitting one hundred per cent of the evaporator coil surface to become effective because it eliminates any necessity for using a part of this coil as a drying agent for the refrigerant:

2 By eliminating return of liquid refrigerant to the compressor crankcase and:

3 By preventing formation of flash gas in the evaporator coil.

The Temprite accumulator-interchanger is a newly designed liquid and suction line heat exchanger incorporating the accumulator principle which traps any liquid refrigerant that may spill over from the evaporator. The accumulator then holds the liquid refrigerant until the liquid line heat can evaporate it thus insuring dry gas being returned to the compressor at all times.

When this highly efficient unit is installed on any low pressure refrigeration system it permits lower temperatures to be obtained, avoids possibilities of compressor trouble and reduces operating costs.

Applications

Low Temperature Food Storage • Quick Freezing Applications
Low Temperature Industrial Coolers • Rivet Coolers • Steel Aging Cabinets

Dealers

Write our sales department today for complete specifications on this Temprite accumulator-interchanger unit. Prompt deliveries are assured on all orders carrying necessary priorities.

TEMPIRE PRODUCTS CORP.

Originators of Instantaneous



Liquid Cooling Devices

DETROIT, MICHIGAN

43 PIQUETTE AVENUE

Precision

NIBCO

WROT FITTING

RETURN BENDS AND TUBULAR PARTS

ACCURATELY made fittings or parts by NIBCO save substantial sums in assembly costs. Accuracy is truly a religion here. Specially designed equipment operated by men who are instinctively fine craftsmen makes precision manufacture almost automatic. Constant inspection with individual gauge testing of every item makes it positive. Get our Catalog No. 613. Some of the 1000 items and sizes of our standard fittings shown there may be just what you need. Whenever you require special tubular or cast parts, you can be sure of absolute uniformity and highest quality when they're made by NIBCO.

NORTHERN INDIANA BRASS CO.
ELKHART, INDIANA
VALVES AND FITTINGS SINCE 1904

New Ice Box Quota Order Sets Performance Specifications, Limits Use of Materials

WASHINGTON, D. C.—A new schedule for production of ice boxes during the next three months has been issued by the War Production Board. It permits a total of 267,008 non-mechanical refrigerators to be produced for general civilian consumption during the year's third calendar quarter.

In addition, the order (No. L-7-c) as amended states performance specifications, and fixes a maximum on the use of hardboard and of iron and carbon steel:

(Supplementary Limitation Order L-7-c, as Amended June 30, 1943)

993.4 Supplementary Limitation Order L-7-c-(a) Definitions. For the purpose of this order:

(5) "Hardboard" means a homogeneous board having a specific gravity in excess of 1.0 which is composed of wood fibre with or without artificial binders.

(b) General restrictions. (1) No person shall produce any domestic refrigerator:

(iii) Having iron and carbon steel content of more than 6 pounds; or

(iv) Containing more hardboard than 50 square feet.

Hardboard Use Limited

Scarcity of masonite, as identified by the definition of hardboard in the order, imposes a limitation specifically on the use of this special material.

The amendment provides also for declaration, by any prospective man-

ufacturer under production quota, of the amounts of these critical materials going into each box:

(2) (i) . . . Any person desiring to obtain a production quota shall file with the War Production Board at least 30 days before the expiration date of the schedule in effect at that time a written application to be assigned a production quota for such period as the War Production Board shall specify.

(ii) Such application should contain a statement as to the amount of iron and carbon steel, hardboard and other critical materials to be contained in each domestic ice refrigerator the applicant proposes to produce during such period. Whenever production quotas are assigned by the War Production Board, it will take into consideration the amount of iron and carbon steel, hardboard and other critical materials to be used by each applicant, the extent to which the domestic ice refrigerators which each applicant proposes to produce conforms to the performance specifications contained in Appendix A attached to this Order, as established by tests of the National Bureau of Standards, the labor and transportation situation in the area where the plant of each applicant is located and such other factors as the War Production Board shall deem appropriate.

In assigning production quotas, consideration is given to the performance of the box. Specifications

included in the amended order suggest a criterion of efficient operation. In an 85° room with no load in the food compartment, the specification suggests an average temperature ceiling of 48°; the temperature of the milk storage space as not above 46.5°; that the ice meltage during a 24-hour period should be no more than 17.18 pounds in a 3-cu. ft. box, and no more than 23.78 pounds in a 5-cu. ft. box.

Specifications Outlined

Appendix A Performance Specifications for Domestic Ice Refrigerators

I. Temperature & Ice Meltage Performance

1. The refrigerator shall maintain with no load in the food compartment an average food compartment temperature of 48° F. or less and a temperature of 46.5° F. or less in the milk storage space at 60% of initial ice load with the room at an average temperature of 85° F. plus or minus 1° F.

2. The temperature at a point two inches above the bottom of the food compartment and two inches from the sidewall, located in the vertical plane perpendicularly bisecting a return air duct shall not be higher than the temperature of the air entering the return air duct. (The return air duct is defined as the duct or ducts through which the air in the refrigerator returns from the food

compartment to the ice compartment.)

3. Ice meltage at 60% initial ice load for food compartment volumes between 2.75 and 5.5 cubic feet shall not exceed the value, in lbs-day, computed from the following formula:

$$M = 7.28 + 3.3V$$

where M is the ice meltage in lbs-day and V is the volume of the food compartment in cubic feet. Note: This formula applies only under the following conditions: Room temperature 85° F.; Average food compartment temperature 48° F.; and Food Compartment volumes ranging between 2.75 cubic feet and 5.5 cubic feet.

Construction Performance

4. Box deformation: The box shall show no permanent vertical deformation in excess of 3-16" per 3 feet of vertical elevation when subjected to a horizontal load of 350 pounds applied along one diagonal of the top from front to back with the box fastened to the floor at all four legs.

5. Door damage: The door and hinges shall show no permanent damage when the door is subjected to a vertical load of 100 pounds applied to the upper outside corner 2 inches from the outside vertical edge of the door with the door open and at an angle of 90° with the front of the box.

6. Ice Shelf: The ice shelf shall be able to support a load of 200% of the normal ice load without fracturing the shelf or supports or causing permanent sagging of more than 1-16" at the center, sides and back.

7. Food shelves: Full width food shelves shall have sufficient strength to support an evenly distributed load of 50 pounds without fracturing or permanently sagging more than 1-16" at the center. Fractional width shelves around the milk storage space shall have sufficient strength to support an evenly distributed load of 25 pounds without fracturing or permanently sagging more than 1-16" at the center.

8. The back of the ice compartment shall withstand without damage an impact of 40 ft. lbs.

9. The refrigerator door shall withstand without damage to the door, hinges and latch a closing of 100 consecutive times from a fully opened position (opened through an angle of 180°) by an impact of 40 ft. lbs. applied at the center of door.

These figures present a minimum standard compatible with requirements for public health. They involve performance only, however, not materials to be used. The boxes must be so constructed so as to pass also-specified performance tests of durability.

Production of ice boxes during the next three months is assigned to 36 manufacturers, 28 of which were on the previous schedule. Eight of those on the current schedule are new, which four who were on the previous schedule did not apply for further assignment and do not appear.

Although the total production figure for the quarter represents a gain of 27,433, the Consumer's Durable Goods Division, which administers L-7-c, estimates that scarcity of ma-

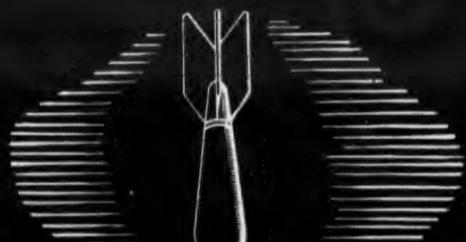
terials and the difficulty that new manufacturers will have in initiating production will continue to hold actual production below the approved quotas.

New Quotas Established

PART 993—Domestic Ice Refrigerators Schedule IV to Supplementary Limitation Order L-7-c

993.8 Schedule to Supplementary Limitation Order L-7-c. Pursuant to paragraph (b) (2) of Supplementary Limitation Order L-7-c, the following production quotas for domestic ice refrigerators are hereby established for the period from July 1, 1943 to September 30, 1943, inclusive. During that period each person named is authorized to produce without limit as to number, domestic ice refrigerators pursuant to orders bearing preference ratings of AA-5 or higher, provided that he delivers such domestic ice refrigerators to the person placing such orders prior to October 1, 1943, and in addition, each person named is authorized to produce the number of domestic ice refrigerators set forth below opposite his name:

Name	No. of domestic ice refrigerators
Advance Manufacturing Company, Boston, Mass.	900
Alaska Refrigerator Company, Brooklyn, N. Y.	5,418
American Fixture & Manufacturing Co., St. Louis, Mo.	12,500
Atkins Table & Cabinet Company, Brooklyn, New York	4,000
Bruswick Refrigerator Company, Brooklyn, New York	4,000
Chattanooga Stamping & Enameling Co., Chattanooga, Tenn.	5,000
Coleman Furniture Company, Pueblo, Colorado	5,000
Colson Metal Products Company, Kansas City, Missouri	5,000
Coolerator Company, Duluth, Minnesota	46,000
George H. Dean, Incorporated, Norwood, Rhode Island	1,500
Dratich's Victory Refrigerator Box, Brooklyn, New York	2,500
Durasteel Company, Hannibal, Missouri	5,000
Empire Cabinet & Table Co., Incorporated, Brooklyn, N. Y.	1,000
Fleetwood Craftsmen, Incorporated, Fleetwood, Pa.	5,000
Fy-Boro Metal Products Company, Inc., Brooklyn, N. Y.	8,172
Getz Bros. & Company, San Francisco, California	5,000
Globe Wood Products Company, Brooklyn, New York	3,000
Ice Cooling Appliance Corporation, Morrison, Illinois	16,065
Iceland Refrigerator Company, Inc., Brooklyn, New York	5,000
King Refrigerator Corporation, Brooklyn, New York	5,000
Lorraine Woodworking Company, Inc., Brooklyn, New York	5,000
Maine Manufacturing Company, Nashua, New Hampshire	15,000
Minton Lumber Company, Mountain View, California	5,000
Modern Refrigerator Company, Brooklyn, New York	5,400
Modern Refrigerator Works, Glendale, California	4,500
C. Nelson Manufacturing Company, St. Louis, Missouri	5,000
Progress Refrigerator Company, Louisville, Kentucky	6,843
L. D. Reeder Company, Los Angeles, California	1,000
Sanitary Refrigerator Company, Fond du Lac, Wisconsin	25,800
Seeger Refrigerator Company, Paul, Minnesota	18,177
Sheridan Store Equipment Company, Kansas City, Missouri	5,000
Stoddard Manufacturing Company, Mason City, Iowa	3,000
Success Manufacturing Company, Gloucester, Mass.	5,004
Victory Manufacturing Corporation, Baltimore, Maryland	3,500
Ward Refrigerator & Manufacturing Company, Los Angeles, Calif.	11,229
R. F. Williams Lumber Company, Dorchester, Mass.	2,500
Issued this 30th day of June 1943.	
War Production Board, By J. Joseph Whelan, Recording Secretary.	



Who Wins Wars?

Strangely enough, you do! Much as we all detest war the fact is that under its stimulation a nation always develops new products with infinite peacetime applications. Look at the radio and the airplane! To date, scores of fantastic devices have been created for war purposes which later will contribute mightily to the pleasure of your life. And just as we've helped build the cars and refrigerators you own today, Weatherhead will one day help build for you these amazing new products of the future.

Look Ahead with



Weatherhead

THE WEATHERHEAD COMPANY, CLEVELAND, OHIO
Manufacturers of vital parts for the automotive, aviation, refrigeration and other key industries.

Plants: Cleveland, Columbia City, Ind., Los Angeles
Canada—St. Thomas, Ontario

For Positive Detection of Refrigerant Gas Leaks!

THE LENK Halide Detector

For the refrigeration engineer
and service man!

Immediately locates leaks of the commonly used refrigerants such as: sulphur, methyl, carrene, F-12, Freon or ethyl chloride.

Of sturdy construction, the LENK detector features: flame-control, shut-off valve, self-cleaning orifice, and non-clogging burner.

The LENK Halide Detector
is also an effective Hi-Heat
Alcohol Blotorch.

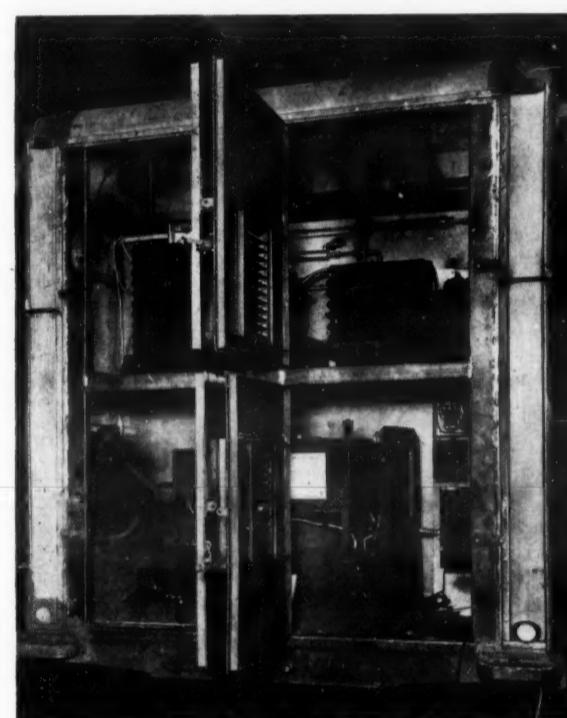
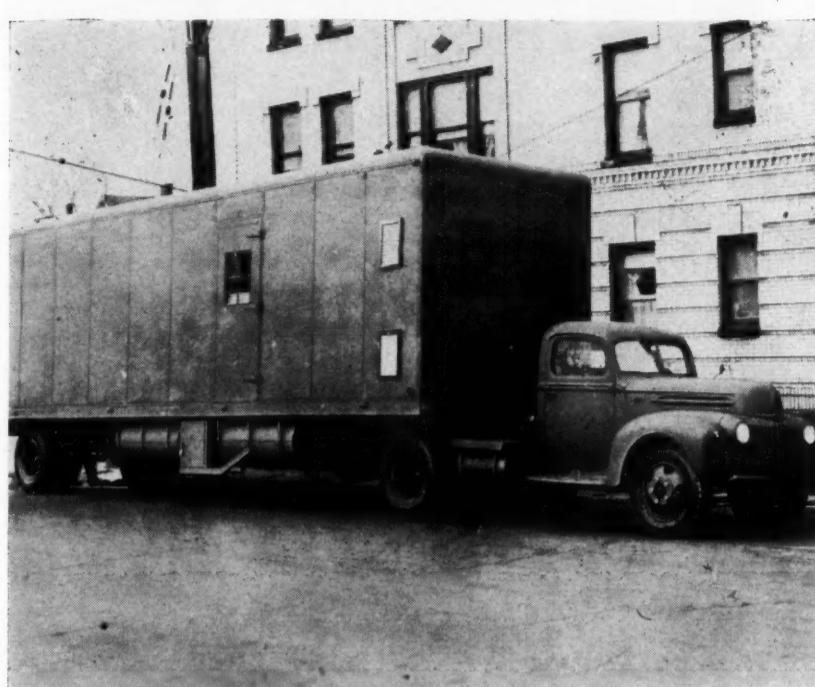


Write for Priority
Information and Catalog!

THE Lenk MFG. CO.
NEWTON LOWER FALLS, MASS.

Manufacturers of Soldering Equipment Since 1919

★ ★ ★ ★ ★

Healthful Living Quarters on Wheels

(Above) This sleeper trailer, one of the "three-piece" mobile trailer division used in Africa, provides air conditioned sleeping quarters for 30 persons. Unit is gasoline-engine or electric driven. (Left) Compact machine for the kitchen trailer, providing cooling for both food preservation and human comfort.

3-Trailer Air Cooled 'Mobile Division' Saved Health of Base Technicians In Africa

WASHINGTON, D. C.—Somewhere in North Africa a new type of "mobile division" is in action, the first of its kind in existence.

It consists of only three trailers, but they are the first of their kind and promise to be models for an expanding fleet. One trailer is the mobile kitchen with refrigeration for food preservation and air conditioning for the eating quarters. Another is a sleeper trailer which is air conditioned. The third is a semi-trailer refrigerated and used for food storage. The fleet is for the accommodation of engineers and technicians constructing advance bases for troops under oppressive climatic conditions.

This mobile division was specially designed by Parkway Motors of Washington incorporating Carrier air conditioning and refrigeration and built in March of 1942, shipped to North Africa, and has been operating there since last June.

Previous experience under such working conditions had shown that some sickness occurred shortly after a crew was transferred from a temperate zone. In some cases, working efficiency was reduced.

This proved the necessity of cooler quarters and protection against insects and germs at meals and during sleeping hours. The answer was provided by Parkway in designing the mobile bunkhouse, food storage and kitchen, the latter having a screened-in wing which serves as the dining room and is erected adjacent to the

kitchen proper.

Both the kitchen and sleeping unit were equipped with air conditioning units capable of maintaining clean, cool air in circulation even when the temperature outside hit as high as 130° F. Neither of the Carrier units have required any spare parts nor have they failed in operation once despite the fact that they have been in operation continuously since June 1942 according to official reports.

The mobile kitchen was originally designed to feed 100 men but proved adequate for 300 when put in operation. It was completely equipped before shipment with stove, utensils, silver and china as well as a refrigerator with Carrier automatic temperature control.

The air conditioned bunkhouse sleeps 24 persons in individual beds and six more in hammocks which can be slung in the aisle. Fluorescent lighting, shower bath, lavatory and screened doors and windows are other features. The air conditioning equipment on both units can be run on AC, DC or gasoline engine. Additional models are now on order by the War Department.

A third type of trailer also manufactured by Parkway, is the mobile refrigerating unit for frozen food, an assembly which can be loaded on the deck of a transport and driven off onto the dock and to any desired destination at the receiving end. This eliminates extra loading operations and expedites movement of food.

A temperature of 0° F. is maintained in the food trailer except in the vestibule opening onto the two main refrigerator compartments. The vestibule, designed to prevent excessive rise in temperature due to entrance of outside air, may be held at a temperature as low as 30° and can be packed with foods not requiring extreme cold when the unit is shipped.

A refrigerating unit is employed which can run on AC, DC or a self-contained gasoline-driven electric generating plant.

Both of the main refrigerator compartments have a capacity of 260 cubic feet and are equipped with manually controlled thermostats which permit temperature settings as desired.

A variation of this unit, also made by Parkway, is the refrigerated "lift box" which has 206 cubic feet capacity and weighs approximately 6,000 pounds. This is not a mobile unit but is designed primarily as a refrigerated storeroom which can be hoisted into the ship's hold and onto the dock on arrival.



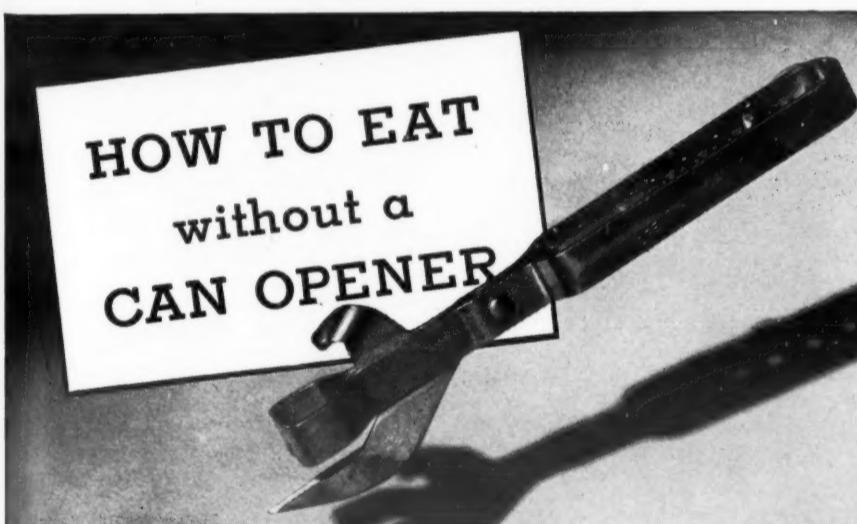
FROM A WALKIE-TALKIE BATTERY ... A CAMERA STORE FOR 194X!

STORIES of a number of wartime plastics uses contributed to this conception of a camera store for 194X by New York Architect Morris Ketchum, Jr. One which particularly fired his imagination, however, was a battery case for compact walkie-talkie radios molded from Lustron, Monsanto's lightweight, water and weather resistant polystyrene.

Starting with a ceiling of translucent Lustron panels which make use of those

same qualities, Mr. Ketchum has gone on to visualize a complete store based on the logical development of wartime advances in several other Monsanto plastics as well.

Mr. Ketchum's store, however, is by no means an all-plastics creation. Where other materials promise to serve better than the plastics we may expect to have available in the near future, those other materials have been specified.



THIS PROBLEM is being solved every day by the American housewife. She is purchasing more and more frozen foods for her family's table because she knows that in most cases, frozen produce costs her less ration points than an equal amount of canned food. And once her family tries these delicious fresh foods her can opener becomes a useless gadget around the house.

This, of course, can mean but 2 things to the refrigeration industry—First, that the American public is rapidly being educated to the superiority of fresh frozen foods over canned goods. Second, that there will be a demand for hundreds of thousands of storage chests and cabinets for commercial and domestic use.

To meet this post-war demand, manufacturers are developing lines that vary from relatively small enclosures within the domestic refrigerators, up to the room size storage for farms, restaurants and large institutions.

Naturally, the capacities of these units will vary according to their requirements, but CHIEFTAIN units are adaptable to all of these applications, and will be available as soon as the urgencies of war permit the cancellation of present limiting orders.

Right now you may require help in designing your frozen food units—may our engineers assist you? Write today for complete information.

★ When the peace is signed, the leader will still be Chieftain ★

TECUMSEH PRODUCTS CO. TECUMSEH, MICHIGAN



Chieftain

Ceiling: Standard size, clip-on panels of translucent Lustron—chosen for its lightweight, dimensional stability and acid resistance—carry over both the outside lobby and the interior. Above panels is overall lighting system including both incandescent and fluorescent illumination.

Ceiling moldings support panels, also serve as continuous wireways or plug-in strips for down-light fixtures. They might be formed from any one of three Monsanto plastics, Lustron, Resinox or the newest of the family, melamine. As panels are removable, lighting system is easily rebuilt.

Canopy fascia: plastics-bonded plywood which could be surfaced in any desired color with new types of recently developed weather, water and age resistant melamine resins.

Canopy letters: molded from translucent, colored Lustron. Thanks to Lustron's ability to "pipe" light, they could be edge-lit from a concealed source in the canopy fascia.

Photomural wall: eight feet high and the length of the store, is mounted on continuous length of Resinox or melamine-bonded plywood. A film of transparent plastic protects it from wear and careless hands. As a result, it can be cleaned with soap, water and scrubbing brush.

Projection screen: Rear wall of sales area is a large, recessed screen on which could be shown still or motion pictures. Screen, perhaps of a plastics composition, is recessed to increase its luminosity and might also be mounted on light, dimensionally stable, plastics-bonded plywood.

Supporting columns: thin, strong columns of steel or one of the new, light metal alloys. Where maximum strength per unit of area is desired, metals are still superior to plastics.

Door, glazing, and showcases: might some day be formed from non-shatterable, flexible or semi-flexible sheets of transparent plastic but in predictable future should be glass.

The Broad and Versatile Family of Monsanto Plastics

(Trade names designate Monsanto's exclusive formulations of these basic plastic materials)

LUSTRON (polystyrene) • SAFLEX (vinyl acetate) • NITRON (cellulose nitrate) • FIBESTOS (cellulose acetate) • OPALON (cast phenolicresin) RESINOX (phenolic compounds)

Sheets • Rods • Tubes • Molding Compounds • Castings • Vespak Rigid Transparent Packaging Materials



WHAT EVERY PROPHET SHOULD KNOW

Frankly, much development work has yet to be done in laboratories of established building materials suppliers and plastics manufacturers alike, before the store Mr. Ketchum has sketched opens for business. As one of the nation's largest producers of plastics, however, Monsanto is interested in encouraging intelligent, creative prophecies like Mr. Ketchum's. For only when the logical possibilities and limitations of plastics are fully understood can they contribute to the fullest to a better postwar world. MONSANTO CHEMICAL COMPANY, Plastics Division, Springfield, Massachusetts.

Libbey-Owens-Ford "Kitchen of Tomorrow" Stresses New Designs for Refrigerator, Range



(Left) Overall view of the L-O-F model kitchen, showing its familiar "U" shape layout. Oven, at extreme left, is divorced from other cooking units and placed waist-high. Surface cooking and appliance areas, and sink

are covered with lift-type enameled back hood which folds down to continue unbroken wood shelf area when not in use. Drawer to right of sink tips as drawn out, and is used for storage of dry vegetables. Entire



lower section of right wall is devoted to "horizontal" refrigerated cabinet, surmounted by china cabinet.

(Center) Dining alcove is equipped with folding glass-topped table which folds against wall when not in use



to form decorative mural. Dining alcove side of refrigerated cabinet, equipped with sliding doors, forms lower portion of left wall.

(Right) Closeup of the refrigerated cabinet. Equipped with Thermopane

sliding doors, and divided into storage compartments of varying temperatures, the cabinet is most novel in its use of a revolving button-operated turntable which can be used for serving foods in the dining alcove.

units are equipped with wood surfaced hoods, the under sides of which, while in use, provide white enameled splash-backs, but which, when not in use, close down over the appliances to provide an unbroken shelf all the way around the kitchen.

Likewise the dining alcove, "least used room in the present-day house," is equipped with a glass topped, hinged table which, when not in use, folds up against the wall, the legs from each end folding together to frame a decorative mural, making the dining alcove an integral part of the living quarters.

The conventional space-consuming buffet is replaced with a portable combination linen, silver, china and food service cabinet. When not in use it, too, becomes a part of the kitchen shelf unit, leaving unobstructed floor space in the dining alcove for recreation or leisure.

Perhaps most interesting of all the kitchen's features is Mr. Doner's treatment of the refrigeration and oven units. Breaking with tradition entirely on these appliances, he has created a new design for refrigerator cabinets, placing the refrigerator on a horizontal rather than vertical plane, and divorced the oven entirely from the surface cooking units.

The refrigerator cabinet in this new kind of kitchen runs practically the entire length of one wall. Instead of resting on the floor, it is raised approximately a foot, and is topped by a waist-high serving shelf accessible from both kitchen and dining rooms. One end of the cabinet is surmounted by a glass enclosed china and crystal cabinet, and a sliding glass wall separates the kitchen and dining areas.

The refrigerated area, some four times that found in today's popular

(Concluded on Page 17, Column 1)

'Refrigerated Area' Novel Idea, But Faults Noted

TOLEDO—Critics will be able to find a good many faults in the "Kitchen of Tomorrow" recently unveiled by the Libbey - Owens - Ford Glass Co. here, but even the most

conservative "expert" could agree that this labor-saving postwar dream room bursts with new ideas for the major appliance field.

Surprisingly, the "Kitchen of To-

morrow" as conceived by L-O-F Designer H. Creston Doner, is not the chrome, plastic and color-splashed gadgeteria which might be expected when an industrial designer is given

a free hand with no holds barred in creating his postwar dream model.

On the whole, the kitchen is conservatively and tastefully styled, with proper emphasis laid on saving labor, creating unitary features adaptable to mass production economies, and better utilizing floor space in the postwar home.

While admirably designed with an eye to production economies, the model kitchen is not, nor is it intended to be, a finished job. Work shelves have been designed to provide a maximum of labor-saving—the designer claims that 75% of the kitchen work can be done while seated with the new layout—and cupboards below the shelves have been eliminated.

At the same time, however, a serious flaw can be noted in the location of the refrigerator in this very same "stooping area," the top of the cabinet coming only to shelf level.

Likewise, no provisions have been made for the freezing of ice cubes; sliding vertical doors are generally considered wasteful in refrigerator design, and it is doubtful that, even with the unique plywood construction featured in the unit, the supports placed under the refrigerator cabinet in the model kitchen would support the cabinet in actual use.

Like many a present-day food preparation center, the L-O-F kitchen is laid out in the familiar "U" shape, with oven and surface cooking units along one side wall, sink and food preparation surfaces along the end, and refrigeration equipment along the other side wall.

Unlike present kitchens, this post-war model kitchen is so designated as to become a recreation room, or even an adjunct to the living room when not in use.

Oven, sink, dishwasher and other

The Shining Light of Hope-

Victory is more than a word to the several thousand Inlanders who work, invest and think, unrelentingly, for the peace which will return to them and to nearly 900 of their fighting comrades.

On behalf of these Inlanders we wish we could tell you how their new skills plus our war-

wrested design, engineering and manufacturing "know-how" can some day help you to build, better and more economically, your products of peace.

These things, of course, cannot now be told, but we can tell you that in our contributions to today's products and

processes of war production, Inland workers can see the shining light of hope for a fruitful and productive tomorrow for them—and for you.



INLAND MANUFACTURING DIVISION
General Motors Corporation Dayton, Ohio

Illustrated is one of the series of Inland designed posters appearing throughout our plant and the plants of our numerous sub-contractors as part of our war production drive activities, which has helped our employees Beat Their Quotas of production for—

VICTORY WORK BY INLAND

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METHYL CHLORIDE

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

'Kitchen of Tomorrow' Serves to Point Up a Trend To Efficient 'Wife's Workshop'

(Concluded from Page 16, Column 5) units, provides a variety of temperatures and humidities for various types of food. The entire unit is accessible from either the dining or kitchen areas, and centered in the cabinet is a double shelfed revolving section, push-button operated, which, merry-go-round fashion, swings salads and other prepared dishes from the kitchen to the dining room. Sliding doors, either of wood or multi-glazed glass, provide access to the refrigerated space on both the kitchen and dining room sides of the cabinet. As would be expected, glass shelves are used throughout.

CONDENSING UNIT

The refrigeration condensing unit, located below the work-surface shelf at the back of the cabinet, features the use of outside air, drawn through filters set in the wall, for condenser cooling, and as an added touch, the warmed air discharged from the condenser is used to dry kitchen towels.

The vegetable bin, an accepted part of many present day refrigerators, has been removed from the unit, and placed as a drawer, which tilts downward when drawn out, in the shelf area beside the sink.

UNUSUAL OVEN

The oven, placed opposite the refrigerator, is a curved-glass hooded unit mounted conveniently at waist height. A series of pushbuttons control operation of the hood, built-in revolving barbecue spit, and even the height and angle of the two cooking units. These units, normally in a horizontal position running crossways across the lower shelf of the oven, can be raised or angled-in to provide various heats and varieties of cooking. An aluminum shelf, slid into the oven over these units, provides frying facilities. Oven units are controlled, of course, for both time and temperature operation.

SUNKEN COOKING UNIT

Surface cooking units include four sunken, removable, glass covered utensils which, when moved onto the warming-wells in the portable table service unit, are taken right to the table, eliminating the need for duplicating pots and service dishes, and providing continued heat for the foods at the table.

In addition, the surface portion of the cooking unit features a built-in toaster, combination griddle, sandwich toaster, and waffle iron, and deep-well steam cookers. These cookers provide heat for the cooking of canned foods, and automatically shut off when the steam or water supply used in cooking the foods has evaporated.

A built-in mixing bowl and mixer, automatically supported to operate in the bowl, are placed adjacent to the surface cooking area. For operation of the mixing unit in other of the surface vessels, and for operation of other hand appliances at the work area, a separate electric cord is provided.

As in the case of the oven, each unit in the surface cooking area is automatically controlled for both time and temperature. When not in use, an enamel-backed, fluorescent lighted hood is raised from behind the cooking unit and lowered over all the units, making the entire area a wood-surfaced shelf area again.

HOODED, LIGHTED SINK

Like the cooking surface, the sink of this new kitchen is provided with a hinged hooded and lighted cover. Foot pedals operate water flow in the sink, so that the housewife, seated at the sink, may operate the plumbing without use of her hands. The shelf area of the entire kitchen



is designed with a sweep-back drop, so that, seated at the shelf, leg room is not confined to a straight vertical drop from the shelf edge.

Other features of the kitchen include a head-high fluted glass door wall cabinet running along one entire wall for the storage of non-refrigerated and canned goods; a convenient, hinged knife rack which drops down from below the wall cupboards, and which is equipped with glass covers for the knife blades; hidden fluorescent lights placed inside both wall and china cabinet—built in to eliminate both sight and cost of separate wiring; and glass paneled walls to provide a maximum of natural light.

As an inspiration to designers for the incorporation of both glass and new ideas into postwar models, not only of refrigerators but also of completely prefabricated kitchen assemblies, the L-O-F model has much to offer. The major appliance industry may find it a helpful guinea pig for testing both public and trade opinion.

Mueller Brass Quarter Earnings \$303,934

NEW YORK CITY—The Mueller Brass Co. reports net earnings for the quarter ended May 31, 1943, of \$303,934 or \$1.14 a share after providing \$1,333,000 for Federal income and excess profits taxes and \$200,000 for contingent expenses.

For the six months ended May 31, 1943, net earnings amounting to \$757,905 or \$2.85 a share are reported as against \$844,643 or \$1.18 a share for the same six-month period in 1942.

Marsh Tritrol Appoints Mosby Sales Manager

CHICAGO—The Marsh Tritrol Co., manufacturers of temperature controls and regulators, announces the appointment of E. A. Mosby as sales manager.

Mosby was, until recently, a regional fuel oil ration officer of the Office of Price Administration and prior to his government work, was associated with the General Motors Acceptance Corp. as a branch manager.



Kennally Outlines Philco Plans and Hopes For Postwar Merchandising

PHILADELPHIA—In response to requests for a statement on Philco's post-war plans, T. A. Kennally, vice president in charge of sales, has authorized the following:

"Philco has great plans and high hopes for the post-war period and should be in an especially strong position to realize them. The scientific research now going on to meet the needs of the war emergency, the precision standards required for government equipment, and the continuing strength of the distributor-dealer organization should all combine to help Philco make the most of post-war opportunities.

"All our studies indicate that the market for homes and automobile radio receiving sets, radio-phonographs, refrigerators and air conditioners at the end of the war will be of unprecedented proportions. The public, unable to purchase these products at the present time, will be eager to obtain them as soon as production is resumed.

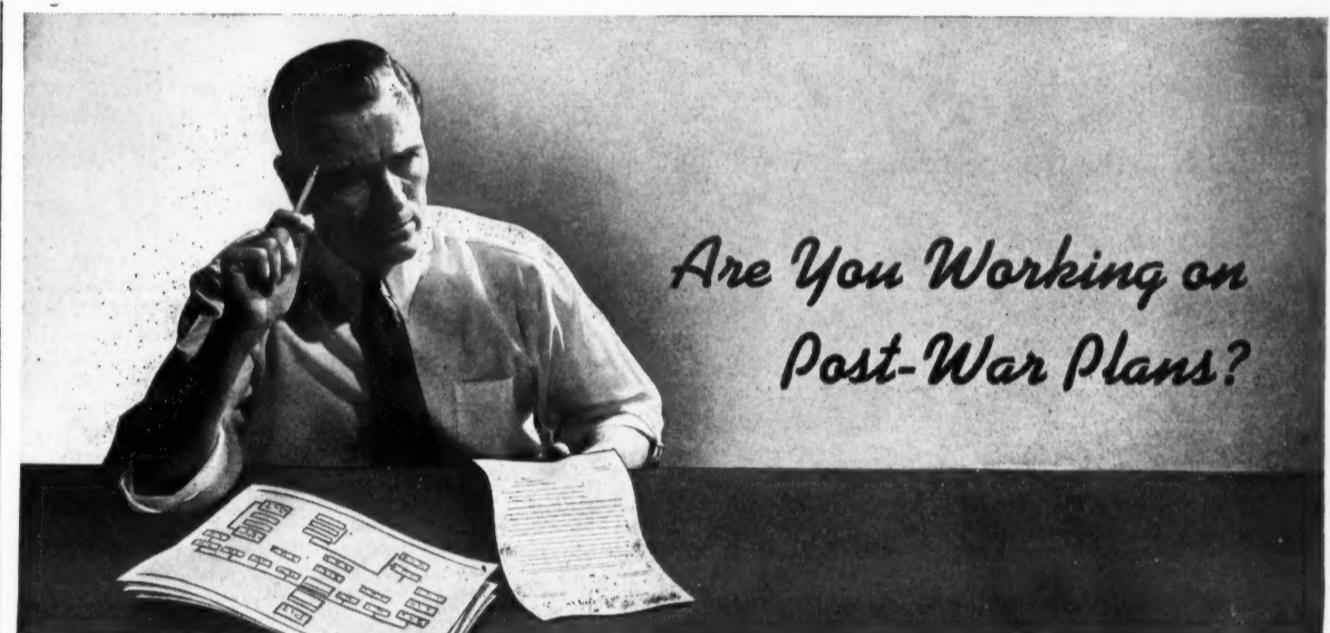
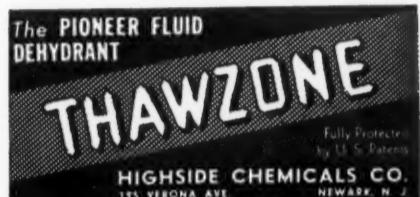
"There is good reason to believe also that soon after the war, television will begin to realize its high promise. The technical accomplishments prior to Pearl Harbor demonstrate that television network operation is already practical, and undoubtedly much of the recent work in the field of electronics will directly or indirectly contribute to the further improvement of the art. This means that it will be possible in a short time through wireless links to provide the best television entertain-

ment for millions of people and should stimulate the demand for television receivers. Starting slowly at first and then gathering momentum, this business within a few years should be far greater in dollar volume than radio ever was.

"It is a definite part of Philco's post-war planning to have a radar and communications division which will serve the Army and Navy and stand ready to be of all possible assistance in connection with their production and service requirements on present radar and radio equipment as well as in connection with the development of new products.

"This division will also be prepared to handle all requests for peace-time applications of radar and electronics equipment that the government approves. In the post-war period every plane and every ship will undoubtedly be required to carry radar equipment in the interests of safety. Radar should do more than any other development of recent years to make civilian flying safe and dependable. Through this new division, Philco will be prepared to contribute to and benefit from this development.

"Other plans which will be of great value to distributors and dealers are in the making and can be put into effect as soon as the war is over. But until that time comes, Philco believes that the best post-war planning is to carry through its war production job to the limit of its ability and capacity."



When the war is over will your organization—your product—your service—readily adapt itself to post-war conditions? Have wartime developments revealed the extent to which new designs and methods must be considered?

We at White-Rodgers cannot answer these questions for you. But, if the control of temperature and pressure is essential to the successful application of your product or service, we will be glad to tell you about the White-Rodgers Hydraulic-Action principle of temperature control and the advantages it offers.

To assist you in setting up your post-war plans we have prepared a "Post-War Planning Checklist." We will be glad to send you a copy upon request.



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Senators Envision Major Change In U. S. Farm Economy By Locker Storages

EDITOR'S NOTE: The Subcommittee on Food Supply of the U. S. Senate Committee on Agriculture held hearings a few weeks ago on the question of providing materials for the expansion in the number of refrigerated locker storage plants in this country. The committee asked favorable action on such a program, which is now said to be "in the works" in Washington.

Transcript of the hearings has recently been made available, and starting with this issue, the News will print excerpts from the transcript, for the reason that they give—from many sources—the reasons why locker plants can increase and improve our food supply. Especially interesting is the knowledge and enthusiasm of some of the Senators themselves on the subject.

Sen. Aiken Outlines Purpose of Hearings

Senator Aiken. This subcommittee of the Committee on Agriculture and Forestry, which is concerned with the food supply of the United States, has been requested to hold hearings on the matter of frozen food locker plants. There has been a great many of these requests, gentlemen, due to the fact that many communities all over the United States; in fact, I understand a very large number of them are making application or have made application for the construction of new plants in their communities. They have found very great difficulties, if not an absolute impossibility in getting priorities granted for the

construction of any new plants. That has proved to be the case where the material for the plants is available on the ground, or virtually all of the material is available to construct new plants for the preservation of food.

The people who should be most interested in the frozen-food plants, the victory gardeners, of which we have several million, are wondering how they are going to handle the surplus which they believe they are going to have in their gardens, and farmers who raise their own truck gardens who well could have been taken advantage of this situation right along. All he gets back is an empty crate themselves for feeding themselves than they ever have been before.

More recently the wave of quick frozen locker popularity has been sweeping into the cities and promises

to be a very great concern of the city people themselves.

If there is any good reason why material on hand should not be used for the construction of these plants, the subcommittee wants to know it. However, there appears to be a bottleneck somewhere.

The committee has decided that it will exert every effort to locate this bottleneck and to do all it can to correct it, so that we can be sure not only of raising food for this year but of preserving it and keeping it and making the best use of it after it is raised.

Sen. Tobey Describes Own Experiences

STATEMENT OF HON. CHARLES W. TOBEY, A UNITED STATES SENATOR FROM THE STATE OF NEW HAMPSHIRE

Senator Tobey: I am very glad to speak of this matter, to bear testimony of my faith and my conviction that this movement for frozen food refrigerator lockers throughout the country, especially in the rural districts, is to my mind, one of the most successful, one of the most important, and one of the most rapidly growing movements that has been initiated for some time.

I am a small-town man, coming from a little town of only 240 citizens. I have spent a great many years on a small farm which I operated and pioneered with myself, along with the other farmers in the community. I think as a result of that I know their problems, the problems of the people in the small town, the rural community, one where, as one of its members, I want to live and die. It is from that standpoint that I approach this subject.

Anybody that knows the trouble we are having in producing sufficient food—anyone who knows the need of food in this country today, in my opinion, should be very much interested in this matter. They should have its advantages brought to their attention.

When these witnesses come here and testify, I think definitely the advantages which accrue from this system will be very clearly demonstrated. I know these witnesses will set out the advantages which these facilities give to the country as a whole, advantages as varied as they are important. For instance, it will save money by not only the preservation of food, by the food being available where and when needed, but it will have the advantage of saving money for each family in their consumption not only of meats and meat products but of vegetables, fruits, and berries. This is borne out by the Government estimates which show there will be a very substantial saving to the average rural family, as well as to many of the urban families, by the utilization of this frozen food locker system.

One Place for Surplus

With regard to the small farmer this is particularly important. It permits the small farmer to utilize a basically needed facility—a place where he may store his surplus food supply he has at one time of the year. He is thereby enabled to spread out its use over the course of the year and obtain the full benefit of it.

Take the farmer today, particularly the small farmer who is producing poultry. His poultry usually comes in in quantity in the fall of the year. It is much more than he can take care of without facilities of this kind. By means of these facilities the small farmer would be able to rent one of these lockers, and when he has a surplus of chickens, he can kill and place them in this frozen food locker. Then he will be able to withdraw them from time to time as he needs them throughout the year. In that way he will be able to make use of those chickens when he needs them most. It is a thoroughly sound and economic system, as I see it.

This is not something, however, that is confined to the rural community; it is not confined to the farmers. This movement is rapidly spreading beyond them to the urban population. Take the city people, those people who have a rather small salary of from \$1,500 to \$2,500 a year. The only way that they can make any saving is by making their purchases in the

fall or in the spring of the year. That is impossible unless they have the opportunity to use these lockers for the purpose of putting away food at that time and then withdraw it in other seasons of the year when the prices have advanced very substantially. That is a yearly occurrence. These people in the low-salary brackets are particularly benefited by something of this sort and can utilize these lockers to great advantage.

Won't Hurt Anyone

This is not designed to destroy anyone. This will neither destroy the commission man nor is it going to destroy the middleman. That has been suggested by some people, but I do not think it will. It will not destroy them; they will continue to have their own field in which to operate. Nevertheless, by the same token, every change in life blesses some and diminishes the return to others. This will be a benefit to the plain people that will be very substantial.

Further, it will have an important and beneficial effect upon the large manufacturers of these ice and refrigerating machines. It will give employment to many people throughout the country in their manufacture, erection, and operation. It is the working of this economic force by which the one man is hurt and at the same time another man, by this very same change, is made stronger. That is the inevitable effect of economic change—it is something that cannot be altered.

I have looked into this more than in a cursory way, because I have lived on the farm and in a small town, and (Concluded on Page 19, Column 1)

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Gov't. Authority Offers Figures Showing How Lockers Aid Farmer and City Patron

(Concluded from Page 18, Column 5)
I know farm and small-town life. And, knowing the economic needs of the farmer and the small-town citizen, I stand unqualifiedly for this.

Census Official Relates Value of Storage To Data on Farm Trends

STATEMENT BY FRANK R. WILSON, ASSISTANT TO THE SECRETARY OF COMMERCE AND CHIEF OF THE DIVISION OF INFORMATION AND PUBLICATIONS OF THE UNITED STATES CENSUS BUREAU

Mr. Wilson: I am interested in this thing from two points of view:

One, of a farmer in Iowa, in the neighborhood of Senator Gillette's home, and one of a farmer in New York State in Dutchess County where I have lived in later years.

It has been my observation, in watching the development of these plants in Iowa, that they meet a real economic need and contribute to a reversal of the damaging trends in agriculture. I think the principal trouble with agriculture is that it does not get a large enough proportion of the consumer's dollar.

The Federal Trade Commission hearings covering the year 1935 showed that 40 cents of the consumer's meat dollar went to the farmer. So, in March, I had an experiment made, which I reported to Senator Gillette, at a modern locker plant in Iowa, to determine the actual proportion of the consumer's dollar that could go to the farmer under the most modern type of operation. This was at a new locker plant in Iowa City, Iowa.

Iowa City happened to be a perfect place for this demonstration because the man who conducts the locker plant operates, in addition, the retail meat shop in that city, or one of them. On that day they paid 14 cents per pound for a 275-pound hog.

The Price of a Hog

This man paid \$38.50 for a hog. He processed it, quick-froze it at a cost of \$7.70, which included the curing of the ham and bacon. Of course, it was not the identical meat that he sold that day but it was comparable.

In Mr. Gay's market he sold that same quantity of comparable material for \$46.87 and he had 17 pounds of meat left over. If it had been handled for the farmer, as a service to the farmer, the farmer would have paid the \$7.70, but he would have had meat worth almost \$50 at the end, taking it at the retail price prevailing there on that day.

In any event, it figured out that the farmer, if he had gone through with that operation himself and paid the locker charge, would have had an asset worth more money than his live hog at 14 cents per pound.

Senator Aiken: Have you any figures to show what that \$38.50 hog, or the \$46.20 hog, after it was processed, would have cost the consumer in the city of Washington? I am speaking of the whole hog.

Mr. Wilson: I have figured it up generally. I have not figured it in detail. I would say it would have been almost double the \$46. It would have been at least \$90.

Senator Aiken. Proceed.

Mr. Wilson: It would be very conservative to say \$85 at the prices prevailing in Washington that day. I did not take the advertised figures at the butcher shops. I called the Department of Labor and got their official figures of retail prices in the city of Washington that day.

Senator Aiken: Then would you consider it practicable if there were quick-freezing plants, we will say, in Washington, for the Washington consumer to buy meat at wholesale and have it processed and put in their own lockers in Washington? Would they save anything, and if so, how much?

Picture for a City

Mr. Wilson: If this industry can go ahead as it has been going, a natural development would be a large consumers' cooperative in Washington with a refrigerated warehouse which could accept carload lots of products processed in these locker plants and that could be brought to the consumer for a considerably less cost than now prevailing.

And that is coming to the bottleneck. The bottleneck is that there is no place for locker plants to carry their excess processed materials in the interim.

Senator Aiken: Do you mean in the city?

Mr. Wilson: Between the point of production and the point of consumption, because frozen foods have to be kept at very low temperatures. The bottleneck is the capacity to store that material after it is frozen in the Middle West or any place else.

Senator Aiken: You say you have a home near New York City.

Mr. Wilson: Yes.

Senator Aiken: Is it not true that the people living in the East are patrons of the locker plants and that as such patrons they do buy western meats from their own locker plants, the locker plant acting as the agent for them?

Mr. Wilson: The locker plant buys wholesale from the packers; about 20 percent of all the meat that passes through the locker system is packer meat. About 71 percent of the patrons of lockers are farmers, but the proportion of patrons in the cities is increasing as knowledge of the industry reaches the city person.

Senator Aiken: Is the city patron increasing?

Mr. Wilson: Yes.

Senator Aiken: As the city patron increases will the percentage of packer meat also increase, in your opinion?

Mr. Wilson: Inevitably. Moreover, Senator Tobey did not point to one thing which I think is important. On my farm in Dutchess County, N. Y., I have a big poultry plant with a capacity for about 2,000 layers. Here is the point, and it is a very important point to the eastern grower in connection with the locker system. Unfortunately, the sex ratio of poultry runs about 50 percent. Thus, you get about as many roosters as you do hens. Therefore, in the spring you have a terrific volume of broilers that you have to market. Because these are all thrown on the market at one time, the price is terribly depressed, whereas if they could be frozen it would even out the market during the year and would not bring about this sacrifice of price by reason of the peak season.

That is true in the preservation of older chickens for meat. Chickens reach their best for food value at

about the time they reach their maturity which is, I would say, 6 or 7 months. At that time they have reached their full growth.

If a family wants to keep chickens to consume during the winter there is a heavy mortality in them because of the cold weather.

Out in Iowa, my brother usually kills 100 chickens in October right at the time they are at their best in weight and quality, and puts them in his locker, saving all of that feed, all of that trouble, difficulty, and mortality during the winter. He particularly avoids the heavy mortality that affects poultry in the wintertime.

How It Ups Food Supply

Senator Aiken: Mr. Wilson, what is your opinion as to the value of the quick-freezing locker plants in relation to preserving or increasing the food supply of the country?

Mr. Wilson: Well, I took some figures out of the 1940 census which show you how absurdly little the American farmer depends on his garden. Out of 6,099,000 farmers that were canvassed in 1940, 4,800,000 had gardens. And the average contribution to the family food bill from the garden was only \$44. Obviously that is an absurdly small proportion of the farm-

er's maintenance cost. And it is partly due to the fact that the garden produces seasonally. The farmer is not in the business of marketing the stuff professionally. He raises it for home use. He cannot take care of his excess. There is no incentive for him to grow more garden stuff.

I just want to make one other observation. I have made a considerable study of census figures showing what is happening to the farm population. The farm population today is about 4,000,000 less than it was in 1900, although the total population has increased about 35,000,000.

The ratio of farm population to the whole is approaching 20% from an original 95% in the United States. I think it is a fair observation to say that economic stability calls for the maintenance of as big a population on the land as possible near the source of food.

Several things have operated to increase the size of farms. The size of farms have increased from 138 acres to 174 acres per farm.

The number of farms in the United States decreased over 700,000 in the 5 years between 1935 and 1940. The ones that went out were largely small farms. Yet, the small farm produces the bigger return per acre, a bigger one than the large farm. But, it is

handicapped by not having the facilities for processing and marketing the material that fits naturally into the small intensive farm—vegetables, berries, fruit, and so forth.

I have here the result of a 2-percent sample of the 6,100,000 farms in the 1940 census which the Department of Agriculture paid the Census Bureau \$17,000 to make. That has not been made public as yet.

Senator Aiken: Do you expect that to be made public very soon?

Mr. Wilson: Yes.

Senator Aiken: Within the month?

Mr. Wilson: It is our agreement with the Department of Agriculture that it shall be issued as a joint release.

Senator Aiken: I was wondering if it would be available to insert in the record of these hearings which probably will not be printed for at least a month.

Mr. Wilson: Yes. I will leave it with you for that purpose.

Senator Aiken: I think that might be inserted in the record.

Mr. Wilson: Yes. The important thing is that after this war nine and a half million to ten million jobs more will need to be provided. With agriculture having less opportunity to absorb workers because of the increas-

(Concluded on Page 20, Column 1)

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Locker Plants Will Bring About More Farming, More Rural Area Employment

(Concluded from Page 19, Column 5) in efficiency and size of the farms, and the small part of the consumer's dollar that the farmer gets, it is going to contribute to the violence of any economic disturbance when farms are not able to absorb their share of these jobs. Development of anything that encourages the small farmer fits into the economic needs today.

By laying aside every fiftieth card of the 6,100,000 and then checking the dollar income per acre, it was shown that the farms under 10 acres—506,402 of them—had an average value of farm products per acre of \$107.49.

Farms from 10 acres to 29 acres had an average value of farm products per acre of \$30.83.

Farms from 30 acres to 49 acres had an average value of farm products per acre of \$17.26, and right on down to farms much larger, farm income decreasing steadily as size increases.

creased, until you get down to \$1.74 per acre on farm of 1,000 acres and over.

Postwar Return to Farms

Senator Bushfield. May I ask what is the significance of that?

Mr. Wilson. The significance of that is that anything that encourages the capacity for the absorption of more people on the farm is good. If small farms were able to process their material their opportunities can be bettered.

Senator Aiken. Do you believe that when this war is over that there will be an increase in the number of people who will live on small farms for the purpose of security?

Mr. Wilson. I think there will be if there is a way for them to convert their products for their own use and for sale.

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Senator Aiken. That is why you believe it is so important to have these facilities which will enable them to be self-subsisting for a few years if necessary?

Mr. Wilson. Yes; I think this is one of the most important things, economically, that has been developed.

Senator Bushfield. I do not want to delay you in your statement, but I want to have this record clear on this thing, that most of these small farms represent people residing near some urban center where they either raise truck gardens of vegetables or perhaps poultry. Is that the case?

Mr. Wilson. That is pretty generally true.

Senator Bushfield. And the amount that could increase in the number of farmers engaged in that work would be reasonably limited because there is only a certain definite market of urban population to purchase this stuff?

Mr. Wilson. Senator Bushfield, when we are spending \$150,000,000 every year over the counter for chemical vitamins, there is certainly a market for thousands of acres of additional vegetables and fruit production to provide those vitamins naturally.

Senator Bushfield. Yes. I agree with you on that. You apparently did not get my point.

Mr. Wilson. I am sorry.

Senator Bushfield. The land available near urban centers for breaking up into small tracts like this has a certain definite limit?

Mr. Wilson. Yes; but that limit can be extended. Those farms are near cities now because the operators have available transportation for delivery house to house.

Senator Bushfield. He has to deliver his vegetables at least every day?

Mr. Wilson. Yes.

Senator Bushfield. If he had a place to keep them? That is the point I want to make.

Mr. Wilson. That would extend it further out.

Senator Bushfield. That is what I wanted to bring out.

Mr. Wilson. That is right.

The Hog Problem Again

Senator Gillette. Mr. Chairman, may I ask a couple of questions, going back to the Iowa City hog.

I want to see if I got those figures correctly, Mr. Wilson. You said there was a 275-pound hog sold, as your guinea pig, at 14 cents per pound, or \$38.50.

Mr. Wilson. Yes.

Senator Gillette. Then, you figure that if that hog had been sold in the regular channels that from the \$38.50 would have been deducted commission charges, and so forth. Would that eat into the farmer's net income under the present system, reducing it to about \$36?

Mr. Wilson. Yes.

Senator Gillette. Further, that that hog, after it had been processed and the meat returned to that same market, represented meat of what value?

Mr. Wilson. About \$46 plus 17 pounds of meat left over, which would make it around \$50.

Senator Gillette. That hog represented meat when it was processed and returned to the same locality, of \$50?

Mr. Wilson. Yes.

Senator Gillette. Then that same hog under your figures, processed and shipped to Washington, D. C., represented what in money value?

Mr. Wilson. Approximately \$85 at retail prices prevailing in Washington on that day.

Senator Gillette. That same hog would have brought \$85 here and \$50 in Iowa City?

Mr. Wilson. Yes.

Senator Gillette. And the farmer got \$36?

Mr. Wilson. Yes.

Senator Gillette. Having that in mind, your suggestion was if that same hog could have been processed locally, that would be desirable?

Mr. Wilson. Yes.

Senator Gillette. Under this locker system it could have been frozen?

Mr. Wilson. That is right.

Senator Gillette. It would have represented a much more substantial return to the farmer?

One More Link Needed

Mr. Wilson. If the farmers out there had retained possession of that meat, paid the processing charge, and shipped it to Washington in carload lots, the over-all cost would have only been 1 cent per pound for freight, and at the price in Washington on that day it would practically double the return that was obtainable on that day in Iowa City.

But the farmer could not do that

because the system has not been extended sufficiently to take care of the interval between the locker plant and the ultimate consumer in the big cities.

Senator Gillette. Mr. Wilson, I am going to have to go, but I am just going to ask you this for my own information.

Mr. Wilson. Yes.

Senator Gillette. These lockers are of no use or are of no value in preserving or keeping vegetables, such as fresh vegetables, are they?

Mr. Wilson. Oh, yes; they are.

Senator Gillette. On a quick-freezing basis?

Mr. Wilson. This is going to be a very important development, very important. That is why they would be so marvelous if they were developed all over the country.

Freezing of Berries

Senator Gillette. Take strawberries or raspberries. In your opinion they are preserved by this quick-freezing

process.

Mr. Wilson. Yes.

Senator Gillette. You have to have equipment for quick-freezing them, do you not?

Mr. Wilson. The same equipment for freezing the meat freezes the berries.

Senator Gillette. You can take your berries from your patch into these plants and have them frozen and stored?

Mr. Wilson. Yes. Put them into a paper carton and put a little sugar with them and take them in there and have them quick-frozen and put them into your locker.

Senator Aiken. Of course, I can testify to that because I have had hundreds of bushels of strawberries spoil over the past years that could have been saved at a reasonable cost to the consumer and some benefit to me if there had been facilities available for quick-freezing them.

Senator Gillette. The same would pertain to tomatoes?

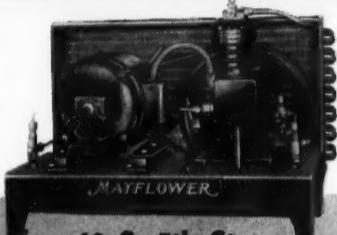
Mr. Wilson. No. You cannot. That (Concluded on Page 21, Column 1)

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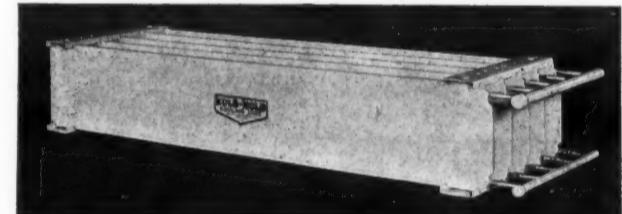
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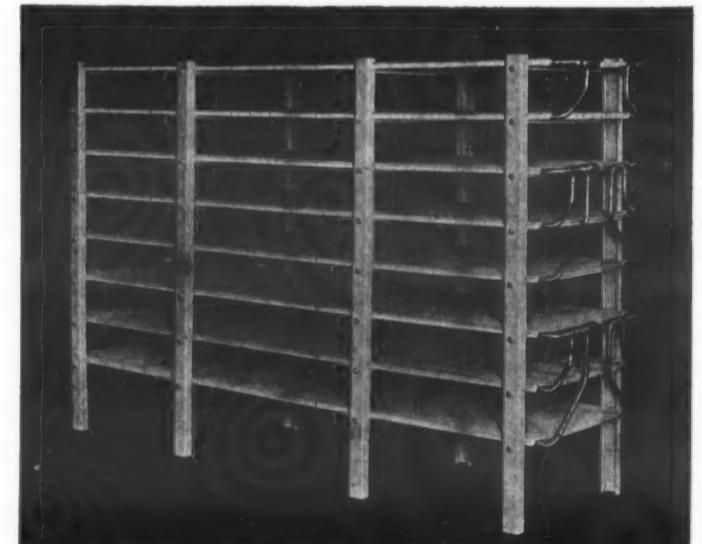
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Senators Show Big Interest In Locker Plant Economics

(Concluded on Page 20, Column 5) is one of the things that you do not freeze. That is one of the acid vegetables that is not amenable to freezing.

Senator Gillette. String beans or snap beans?

Mr. Wilson. Yes.

Senator Gillette. They are satisfactory to be frozen?

Mr. Wilson. Yes; as a matter of fact they are better frozen than fresh. It greatly improves their texture and flavor.

Senator Gillette. If your strawberries or raspberries or blueberries are frozen, would there be any possibility of transporting them to another market?

Mr. Wilson. Not now, because there is no place to carry them after they leave the locker. The locker plant, at the present time, is limited to its storage facilities for the convenience of the farmer who uses it or the city person who uses it.

Senator Gillette. Can they be transferred while under refrigeration, undergo transportation to a larger market?

Mr. Wilson. If there were facilities for assembling and moving them in carload lots.

Senator Aiken. It would be entirely possible for the consumer living in the city to purchase two crates of strawberries in the glut season and keep them throughout the entire year?

Mr. Wilson. And the nice thing is that you get the product at its best when it has just ripened on the vine or the tree or the bush.

Senator Aiken. That is true. It would be at the height of the glut season when the price would be low and the product at its best.

Senator Shipstead. Have you any idea as to what these systems are worth?

Mr. Wilson. You can not get them but if you can they range from \$20 to \$40 a locker.

Senator Shipstead. I have my home 1,500 miles away from here. I produce my chickens or I buy them. I can buy chickens up there and have some now, I can lay them down here by express at 29 cents per pound.

Mr. Wilson. They would cost you less than that if you'd ship them in carload lots?

Senator Shipstead. Oh, yes; I ship them by express.

Mr. Wilson. Yes.

(More Senate testimony by marketing experts, locker plant operators, and individual farmers will be published in the next full sized issue of the NEWS.)

Servicing Sealed Units Of Kelvinator Design

Written in collaboration with the service department, Kelvinator division, Nash-Kelvinator Corp.

Intelligent service can be rendered on the Kelvinator sealed system by any competent service man when he becomes familiar with the few electrical parts and the simple make-up.

The purpose of these articles is to familiarize service men with the simplicity of the system as a whole and to describe normal performance.

The compressor assembly consists of a conventional single cylinder reciprocating compressor with standard flexing valve construction, driven directly with a split phase vertical motor.

This design, while not new, is unique in many of its refinements; it is quiet without sacrificing capacity; it will operate satisfactorily even in cold locations (such as porches), it cannot slug oil which insures long valve life; it cannot displace the oil and therefore cannot run dry; it maintains constantly a correct quality and quantity of refrigerant in the evaporator regardless of ambient temperatures; and the oil cannot become diluted with refrigerant since all of the oil is on the low side, preventing high or varying saturation.

Let us look at Fig. 1 and note that the motor stator is in direct metallic contact with the dome or outer shell. This permits a rapid dissipation of motor heat to the outside. Note the location of motor terminals; the oil level in the dome is above these terminals. The terminal used is of the compression type and utilizes a neoprene bushing as the gasket and insulator.

Since the oil level is above the motor terminals, the compressor is submerged in oil; note, however, that the compressor has a crankcase fully enclosed. Oil is drawn through the thrust bearing at the bottom of the crankshaft into the crankcase enclosure lubricating the lower bearing, piston pin and connecting rod. The sweep of the connecting rod at the bottom of the stroke forces oil up into the upper bearing reservoir and maintains constant lubrication there.

With the compressor in normal operation, the cool gases from the suction line enter the dome below the oil level, agitating the oil slightly and also cooling it. When the compressor is in normal operation, a reduction of pressure occurs through the suction tube (9) in Fig. 1. In the upper part of the dome the suction gases are liberated through the oil and pass through the opening in

the motor rotor to the top of dome.

During this process the oil tends to foam, but since the gas passes through the rotor openings, the oil is driven off centrifugally and is not permitted to enter the compressor cylinder. This accomplishes the function of an oil separator, prevents oil sludging, assures refrigerant in the cooling unit with a minimum of oil dilution, maintains oil in the crankcase with minimum of refrigerant dilution. Cold weather failures are extremely rare.

A controlled amount of oil is permitted to be taken into the intake side of the compressor through a small diameter line to lubricate the valves. The quantity of oil in the dome is great, and there is not sufficient room in any part of the system to rob the oil from the dome sufficiently to impair the lubrication of the assembly.

Normally, the dome temperature varies with room temperature and running time. In cool weather with low operating time, the dome temperature is only slightly warm. In very hot weather with longer running time, the temperature will rise high enough to make it uncomfortable to the touch.

The reciprocating compressor principle is not new but has proved to be a very positive type of pump, operating for a great many years with a minimum of service.

The refinements of the Polosphere unit are unique and interesting, particularly to service engineers whose experience dates back to open type systems.

Compressor Unloading on Kelvinator Polosphere Units

As fractional horsepower split phase motors have a comparatively low starting torque, it is necessary to design the system in such a manner that the compressor is unloaded when the system is started (pressure equal on both ends of the piston).

The unloader originally used on 1938 models was a mechanical unloader actuated centrifugally by the motor shaft rotation. The operation of this unloader was instantaneous. The compressor could be started immediately after it had been stopped. The unloader operated satisfactorily, but occasionally set up a rattle inside the dome. This cannot be corrected without replacing the system.

Compressors having the centrifugal unloader can be recognized by the fact that there is always a high side float assembly on the condensing unit. On all subsequent models including reworked 1938 models the high side float has been replaced with a small diameter liquid line which is the refrigerant control to cooling unit and does the function of the unloader.

On all models with the small diameter liquid line, the period of unloading is comparatively slow. This is because the gas from the condenser is permitted to escape into the evaporator after the compressor is stopped, which requires anywhere from two to five minutes. If the compressor is started before the condenser is unloaded, the overload protector in relay will cut out but will reset automatically.

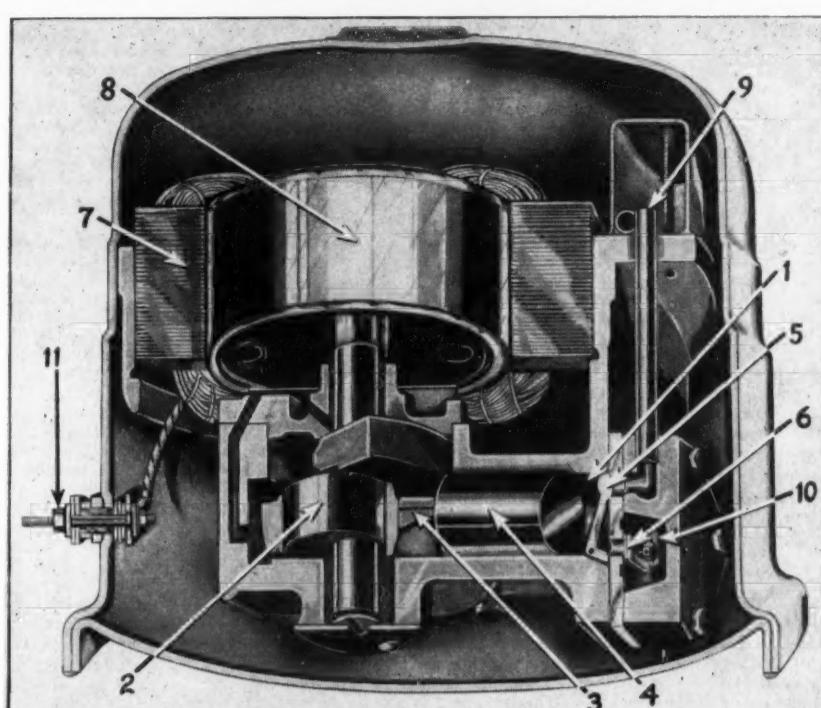
The small diameter liquid line is connected directly to the condenser; no float or receiver is used on these systems.

Richardson Chairman of Rubber Goods Committee

WASHINGTON, D. C.—William S. Richardson, general manager of the industrial products sales division, The B. F. Goodrich Co., has been elected chairman of the OPA Mechanical Rubber Goods Industry Advisory Committee, it is announced from the office of Prentiss M. Brown, administrator of OPA.

The committee which the B. F. Goodrich official will head is composed of representatives of all rubber companies engaged in the manufacture of mechanical rubber goods totaling many thousand items.

Fig. 1 - - Details of Kelvinator Sealed Unit



"Insides" of the Kelvinator sealed unit. (1) Compressor cylinder. (2) Compressor eccentric. (3) Connecting rod. (4) Compressor piston. (5) Suction valve. (6) Discharge valve. (7) Motor stator. (8) Rotor. (9) Suction intake. (10) Discharge port. (11) Motor terminal.

Birds Eye Will Get Ray-Mailing Plant

Cantrell Supply Takes Over Wichita Concern

NEW YORK CITY—General Foods Corp. has signed a contract for the purchase of Ray-Maling Co., Inc., according to E. T. Gibson, vice president of General Foods in charge of Birds Eye Frosted Foods. The Ray-Maling Co. is a packer of canned and quick-frozen fruits and vegetables, with headquarters at Hillsboro, Ore., and plants at Woodburn, Ore., and Yakima, Wash.

The contract, subject to approval by Ray-Maling stockholders, calls for exchange of Ray-Maling properties for 28,023 shares of General Foods common stock. The acquisition is expected to be completed late in August.

The entire sales and operating personnel of Ray-Maling will continue with General Foods, except for Harold W. Ray, president of the company, who wishes to retire.

OASIS Electric Water Coolers

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Look for the
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trouble

In these days we have all come face to face with the necessity of using substitutes so often . . . that some of us are taking it for granted that substitutes must serve!

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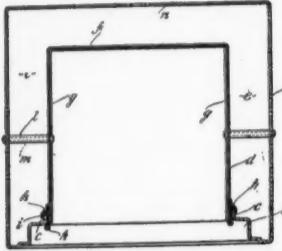
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PATENTS

Weeks of June 15 and 22

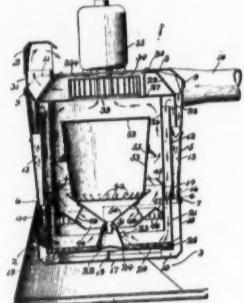
2,321,529. MANUFACTURE OF CABINETS FOR REFRIGERATORS. Nils Erland af Kleen, Stockholm, Sweden. Application February 9, 1940, Serial No. 318,149. In Great Britain August 24, 1939. 2 claims. (Cl. 220—9.)



1. In a refrigerator cabinet, inner and outer molded substantially cubical shells of plastic material spaced from one another to provide an insulation space therebetween, said inner shell having a straight edge portion defining an opening in the front thereof, said outer shell having a recessed front portion extending towards said inner shell across said insulation space and in alignment with the straight edge portion of said inner shell, said recessed front portion terminating in a rearwardly extending flange lying adjacent the outer surface of said inner shell and parallel to the latter adjacent said straight edge portion, an elastic packing element having a flat shank disposed between said flange and the adjacent outer surface of said inner shell, the flat surfaces of said shank extending along the adjacent surfaces of said flange and inner shell, said packing element having a hook portion

adjacent the inner end of said shank overlapping the free edge of said flange, said packing element having an enlarged bead on the outer end of said shank projecting forwardly of the latter and overlying the straight edge portion of said inner shell and the recessed front portion of said outer shell, and a door hingedly mounted on said outer shell and having an inwardly extending inner portion conforming in shape substantially to the recessed front portion of said outer shell and adapted to compress said enlarged bead upon closure of the door to flatten said enlarged bead tightly against the straight edge portion of said inner shell and against the adjacent recessed front portion of said outer shell, whereby an air-tight seal is formed by one side of the flattened bead for the said insulation space between the inner and outer shells, and another air-tight seal is formed by the opposite side of the flattened bead for the door on closure of the latter.

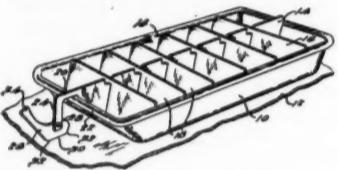
2,321,653. AIR CLEANER. Albin A. Carlson, Muskegon, Mich. Application July 28, 1941, Serial No. 404,492. 1 Claim. (Cl. 183—21.)



In a construction of the class described, an outer substantially vertical casing having a closed top and provided with air inlet means adjacent the top, a vertical cylindrical member within and spaced from the walls of the outer casing, trans-

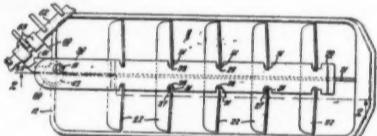
verse means securing said cylindrical member to the outer casing, a receptacle having a bottom and substantially vertical side walls open at its upper end releasably connected at said upper end to the lower end of said casing, a second receptacle having a bottom and substantially vertical walls carried by and within and spaced from the first receptacle, said second receptacle being opened at its upper end, means for releasably holding the upper edges of the second receptacle in engagement with said cylindrical member providing a substantially air-tight joint, a cylindrical sleeve within the cylindrical member and spaced therefrom provided with a horizontal top at its upper end having a central opening therein, said top extending beyond the first mentioned cylindrical member and at its edges having a downwardly extending cylindrical apron resting upon said transverse means connecting the first mentioned cylindrical member and outer casing, a dome over said top engaging against the top closure of the casing, a suction fan mounted within said dome, means for driving said fan mounted on and above the casing, said dome having an air outlet and means connected and associated with and extending below said cylindrical sleeve and upwardly therein whereby air drawn into the casing through said inlet means is directed downwardly into said inner receptacle and thence upwardly around said last mentioned means to said fan, the liquid in said inner receptacle against which the air impinges being agitated and a portion thereof carried in suspension in the air to collect dust from the air, said last mentioned means having a plurality of surfaces against which said liquid and dust laden air contacts, the liquid with the dust collected thereby adhering to said surfaces and draining by gravity back to the body of liquid in the inner receptacle.

2,321,654. ICE TRAY. Clifford R. Carney, Dearborn, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware. Application December 9, 1940, Serial No. 369,153. 5 Claims. (Cl. 62—108.5.)



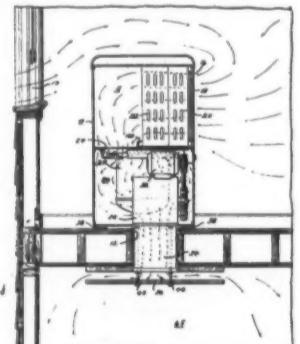
5. In an ice tray grid having cooperating longitudinally and transversely extending separator members adapted to fit within a pan to divide the space within the pan into a plurality of ice block compartments, a projection carried by the longitudinal separator member of the grid and adapted to overlie and extend beyond the front edge portion of the pan free of contact therewith, said projection terminating in a portion positioned outside of the pan and directed downwardly towards the bottom of the pan, and manually operable camming means spaced from the pan and pivoted to said portion of the projection which is positioned outside of the pan to release the pan.

2,321,668. FREEZING TRAY. Harvey D. Geyer, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware. Application March 10, 1939, Serial No. 260,905. 7 Claims. (Cl. 62—108.5.)



1. In combination, a freezing tray having a container pan and a removable grid for said pan, said grid having relatively movable division walls forming ice block compartments when the grid is within the pan, a stationary retaining means located apart from said pan and grid during freezing, and force-multiplying means carried by said grid for moving said division walls relative to each other to loosen the frozen ice blocks therefrom, said force-multiplying means having a projecting member adapted to be held stationary by said retaining means upon the removal thereto of the pan and grid and frozen contents, said force-multiplying means being thereafter operable to loosen the ice from said grid upon manually moving said grid relative to said stationary retaining means.

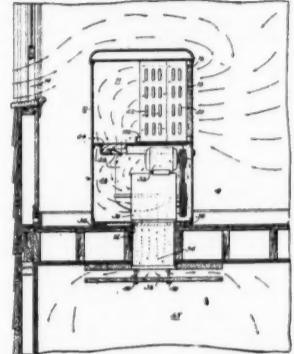
2,321,687. REFRIGERATING APPARATUS. Andrew A. Kucher, Dayton, Ohio, assignor to General Motors Corporation, Dayton, Ohio, a corporation of Delaware. Application October 30, 1939, Serial No. 301,985. 8 Claims. (Cl. 62—129.)



1. In combination, a dwelling having a plurality of rooms, a hallway having openings leading to said rooms, windows in said rooms, a chamber adjoining said hallway and having an opening communicating with said hallway, means for admitting fresh air into said chamber, a self-contained air conditioning unit disposed within said chamber, said unit comprising a casing, an air inlet in said casing attempting means within said casing, an air outlet communicating with said casing, and blower means for flowing fresh air into said chamber, through said inlet, in thermal exchange with said attempting means, into said hallway, into said rooms and thereafter out through said

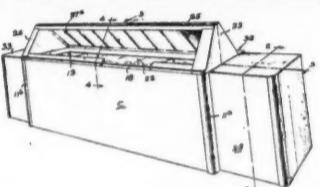
windows, said blower means comprising a first fan unit within said casing and a second fan unit in one of said windows.

2,321,688. REFRIGERATING APPARATUS. Andrew A. Kucher, Oakwood, Ohio, assignor to General Motors Corporation, Dayton, Ohio, a corporation of Delaware. Original application October 30, 1939, Serial No. 301,985. Divided and this application August 27, 1941, Serial No. 408,501. 8 Claims. (Cl. 62—129.)



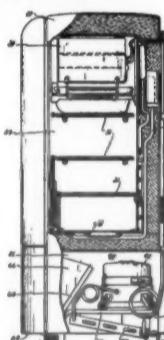
1. A self-contained refrigerating system adapted to be supported by the ceiling of an enclosure to be conditioned comprising in combination, a cabinet supported on the upper side of said ceiling and having an air inlet opening and an air outlet opening, means for directing the air leaving said outlet opening downwardly into the enclosure to be conditioned, an evaporator in said casing, a sealed motor-compressor-condenser unit in said casing connected in refrigerant flow relationship to said evaporator, means for flowing condenser cooling water in thermal exchange relationship with said motor-compressor-condenser unit, and blower means for passing air in thermal exchange relationship with said evaporator and thereafter in thermal exchange relationship with said motor-compressor-condenser unit so as to partially reheat said air before discharging the air through said outlet.

2,321,695. REFRIGERATING APPARATUS. Lotus F. Miller, Cambridge City, Ind. Application November 6, 1940, Serial No. 364,577. 9 Claims. (Cl. 62—89.5.)



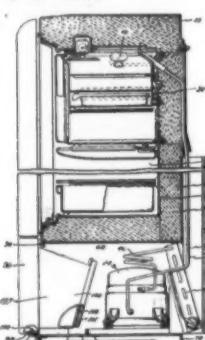
1. Refrigeration apparatus for the storage, preservation and vending of frozen confection, refrigerated food products and the like comprising a cabinet having insulated walls defining an elongated main storage compartment, a top closure overlying said storage compartment, there being a space between said compartment and closure, a series of evaporator sections having closed shells or covers disposed transversely of the main storage compartment to thereby provide baffles which hinder the circulation of air in said compartment, a transparent window rendering the contents of the cabinet visible, the refrigeration apparatus including a warm fluid refrigerant line in heat exchange relation with said window to thereby extract heat from the refrigerant in said line and also raise the temperature of the window and avoid clouding of the latter.

2,321,771. REFRIGERATING APPARATUS. Lawrence A. Phillip, Detroit, Mich., assignor to Nash-Kelvinator Corporation, Detroit, Mich., a corporation of Maryland. Original application August 23, 1940, Serial No. 353,924. Divided and this application July 18, 1941, Serial No. 403,026. 2 Claims. (Cl. 62—89.)



1. Refrigerating apparatus comprising a cabinet having a machine compartment open at its rear and bottom, a refrigerant condenser positioned in the lower portion of said compartment, a compressor positioned above said condenser, a sound insulated panel at the rear of said compartment, and a sound insulated tilted panel at the front of said compartment.

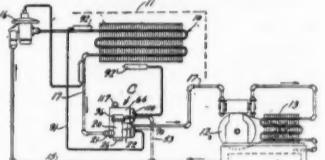
2,321,772. REFRIGERATING APPARATUS. Lawrence A. Phillip, Detroit, Mich., assignor to Nash-Kelvinator Corporation, Detroit, Mich., a corporation of Maryland. Original application August 8, 1940, Serial No. 351,834. Divided and this application November 12, 1942, Serial No. 465,297. 2 Claims. (Cl. 62—116.)



1. Refrigerating apparatus comprising a cabinet having a machine compartment, a flue at the rear of the cabinet and being arranged so that its lower end is open to the atmosphere, a refrigerant compres-

sor positioned in said machine compartment, a refrigerant condenser having a portion positioned in said compartment and a portion in said flue, an insulated panel of sound absorbing material in said flue, and an insulated panel of sound absorbing material positioned in said compartment on an angle on the opposite side of said compressor from said flue and being arranged so that the upper portion thereof is tilted toward said flue and said cabinet being open below said compressor and condenser and the panel on an angle to receive air to pass over the heat emitting part and into said flue.

2,321,819. MECHANICAL REFRIGERATING SYSTEM. Roy W. Johnson and Clarence L. Anghey, Milwaukee, Wis., assignors to Automatic Products Company, Milwaukee, Wis., a corporation of Wisconsin. Application December 4, 1940, Serial No. 368,510. 9 Claims. (Cl. 62—3.)



1. In a refrigerator of the type wherein the refrigerating effect is obtained by virtue of the passage of a refrigerant (Concluded on Page 23, Column 1)

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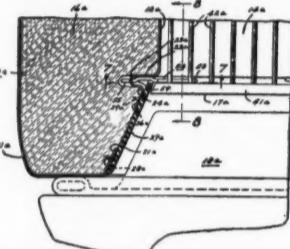
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Patents (Cont.)

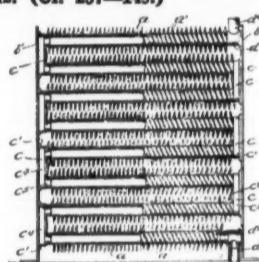
(Concluded from Page 22, Column 5) through a cooling coil disposed in heat interchanging relation to the compartment of the refrigerator, a control valve combined with the cooling coil so as to permit flow therethrough when opened and block flow therethrough when closed, a reversible operating mechanism for said valve, said operating mechanism biasing the valve to open position when acting in one direction and to closed position when acting in the reverse direction, a thermostat subjected to the temperature of the cooling coil and combined with said operating mechanism to cause the same to bias the valve to open position upon predetermined rise of pressure in the coil and to closed position upon predetermined fall of pressure in the coil, a latch cooperable with the operating mechanism and adjustable from a latching to a releasing position, said latch functioning when in latching position and when the valve is in open position to hold the operating mechanism and the valve in valve open position, and a thermostat subjected to the temperature in the compartment and combined with the latching mechanism to move the same to latching position upon predetermined rise in temperature in the compartment and to provide for the movement of the latching mechanism to released position upon predetermined fall of temperature in the compartment.

2,321,865. REFRIGERATING APPARATUS. Edmund F. Schwellen, Dayton, Ohio, assignor to General Motors Corporation, Dayton, Ohio, a corporation of Delaware. Application September 19, 1940, Serial No. 357,455. 10 Claims. (Cl. 312—156.)



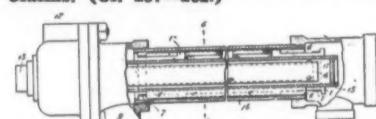
9. In combination, a refrigerator cabinet provided with an inner liner defining walls of a food storage chamber therein, said cabinet having an aperture therein providing an access opening for said chamber, a mold element forming a wall for said chamber access opening, a door for normally closing said opening, shelf supporting means disposed between said liner and said mold element at each side of said chamber access opening, each of said means including a part secured to said cabinet exteriorly of said chamber and concealed by said mold element, and each of said means including another part extending inwardly of the side walls of the chamber access opening and including a thermally responsive element, said controller serving to control the last named means.

2,322,145. HEAT EXCHANGE COIL. Richard W. Kritzer, Chicago, Ill. Application November 2, 1940, Serial No. 364,003. 2 Claims. (Cl. 257—149.)



1. A heat transfer coil comprising a pair of supporting end-plates in confronting relation, a series of tubes between the plates and provided with extended surfaces for heat transfer, and separately formed stamped shells for individually forming connecting-ducts between pairs of tubes, each shell having an open side contiguous to one face of one of said plates and a wall terminating in a rim welded to the contiguous face of the plate, the contiguous face of the plate and said wall forming a closed duct between a pair of tubes, the contour of the rim of each shell conforming substantially to the duct in the shell, a pair of tubes being connected to said duct, the faces of the plates being provided with portions for spotting the separately formed shells on the plates.

2,322,284. HEAT EXCHANGER. Edward A. Dewald, Massillon, Ohio, assignor to The Griscom-Russell Company, New York, N. Y., a corporation of Delaware. Application December 23, 1939, Serial No. 310,689. 6 Claims. (Cl. 257—262.)



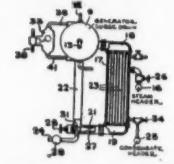
6. An exchanger for transferring heat between fluids in two or more closed circuits comprising one or more tubular heat-transfer elements having fins affixed longitudinally thereto centrally for a substantial portion of the length thereof, flow retarders of sheet material interposed between and longer than said fins, said retarders having three-sided notches on the upper side of the ends thereof and removable retaining rings fitted into said notches beyond the ends of said fins, whereby said retarders are maintained in position around said tubular elements and between the fins thereof both laterally and longitudinally.

2,322,339. METERING CIRCUIT FOR X-RAY REFRIGERATING APPARATUS. Albert E. Beals, Norwich, N. Y. Application February 26, 1938, Serial No. 192,849. 8 Claims. (Cl. 62—6.)

1. An instrument for controlling the operation of air conditioning equipment comprising, in combination, a thermostatic element responsive to variations in the temperature of air in an enclosure;

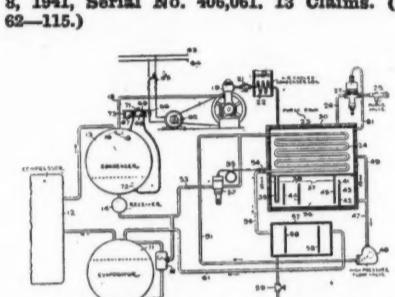
ber for a shelf adapted to be positioned therein.

2,321,929. ABSORPTION REFRIGERATION SYSTEM. Walter E. McGinnis, York, Pa., assignor to York Ice Machinery Corporation, York, Pa., a corporation of Delaware. Original application June 13, 1939, Serial No. 278,949. Divided and this application May 22, 1942, Serial No. 444,072. 11 Claims. (Cl. 62—119.)



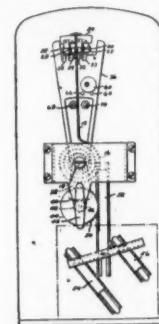
10. In an absorption refrigeration system of the ammonia-water type, a generator comprising a surge drum; means for supplying strong aqua to said drum and discharging weak aqua from said drum; a heater for said drum and having spaced top and bottom headers; means connecting the top header to the upper part of said drum and the lower header to the bottom of said drum; a plurality of riser tubes connecting said headers; and means for supplying heating medium into thermal contact with said riser tubes to cause circulation of aqua from said drum to said lower header and upwardly through said riser tubes to said top header and drum.

2,321,964. PURGE SYSTEM FOR REFRIGERATIVE CIRCUITS. William E. Zieber, York, Pa., assignor to York Ice Machinery Corporation, York, Pa., a corporation of Delaware. Application August 8, 1941, Serial No. 406,061. 13 Claims. (Cl. 62—115.)



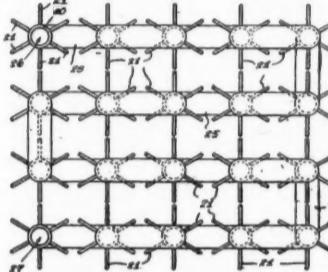
1. The combination of a refrigerative circuit containing a volatile refrigerant and including a condenser; a purge drum; a loaded vent valve controlling flow from said drum and set to open when pressure in the drum exceeds a definite value; refrigerative means serving to cool gases in said drum to a temperature which for said refrigerant is substantially lower than that corresponding to said pressure; means for returning condensed refrigerant from said drum to said circuit; means for delivering from the condenser to the drum, at a pressure higher than the setting of said vent valve, vaporized refrigerant, and air when air is present in the condenser; and a controller responsive to the presence of air in the condenser and including a thermally responsive element, said controller serving to control the last named means.

2,322,145. HEAT EXCHANGE COIL. Richard W. Kritzer, Chicago, Ill. Application November 2, 1940, Serial No. 364,003. 2 Claims. (Cl. 257—149.)



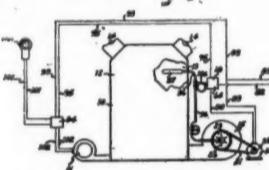
a hydrostatic element responsive to variations of relative humidity of air in said enclosure, an adjustable element, common to both the thermostatic and hydrostatic elements and co-acting synchronously with each; a ratchet, adapted to move in reverse directions and operatively connected with said adjustable element; two contra-positioned pawls, adapted to engage the teeth of said ratchet; a reversibly acting lever, adapted to be fulcrumed at either of two points and pivotally supporting said pawls; two electromagnets, oppositely connected with said lever and adapted to move same in reverse directions; and electric conducting means for alternatively energizing the solenoid coil of either electromagnet.

2,322,341. HEAT EXCHANGE UNIT. Morris F. Booth, Alden, Mich. Application January 27, 1940, Serial No. 315,933. 4 Claims. (Cl. 257—148.)



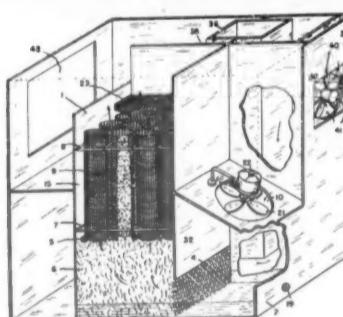
2. An evaporator unit comprising a plurality of parallel sections spaced in horizontal and vertical planes, and each section comprising an extruded tube having lengthwise extending radial fins integral with and projecting from the walls of said tube, means connecting said sections, and said sections being arranged that the fins of adjacent vertical parallel sections form substantially closed walls between said sections and permit passage of air between said walls upwardly.

2,322,405. AIR CONDITIONING SYSTEM. Everett H. White, St. Paul, Minn. Application April 27, 1940, Serial No. 322,085. 15 Claims. (Cl. 236—11.)



8. In an air conditioning system, a motor, a blower adapted to be driven, a variable speed friction drive for connecting said motor to said blower, a heat responsive element, lever means operable by changes in temperature of said heat responsive element for altering the friction of said drive thus to alter the speed of said blower, and manually adjustable means for causing the rate of alteration of the friction of said drive due to temperature changes of said heat responsive element selectively to be varied.

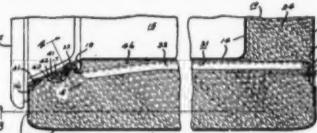
2,322,469. APPARATUS FOR AIR CONDITIONING. Aubrey H. Robson, Detroit, Mich. Application September 12, 1939, Serial No. 294,518. 4 Claims. (Cl. 183—4.)



1. Dehydrating means comprising in combination with means for guiding air to be treated, a plurality of independent reticulated tubular containers arranged in substantially vertical, parallel and spaced relation and each adapted to contain a quantity of deliquescent material, said guiding means being arranged to direct air over and through the spaces between

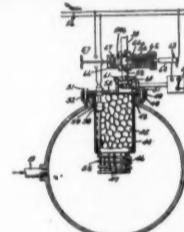
said containers, a covering member for said containers arranged over the open tops thereof, pervious to air, and having individual openings therein registering with the open tops of said tubular containers, said covering member being sufficiently dense to support deliquescent material placed thereupon during charging, said parts being arranged in such manner that excess deliquescent material may be brushed from the covering member into the tubular containers.

2,322,495. REFRIGERATING APPARATUS. Clifford H. Wurtz, Dayton, Ohio, assignor to General Motors Corporation, Dayton, Ohio, a corporation of Delaware. Application October 24, 1940, Serial No. 362,628. 3 Claims. (Cl. 220—15.)



1. A refrigerator construction comprising in combination, a frameless cabinet having metallic outer walls and an inner metallic member spaced from said outer walls and forming walls of a food storage compartment within said cabinet, an outer wall of said cabinet having an aperture therein, said compartment wall-forming member having an aperture therein registering with the aperture in said cabinet outer wall and providing an access opening for said food compartment, an element secured to and overlapping the edge of said cabinet outer wall at the aperture therein, said element also being secured to and overlapping the edge of said compartment wall-forming member at the aperture therein to form a wall for said compartment access opening, insulating material in the space between said compartment wall-forming member and said cabinet outer walls, and rigid cantilever reinforcing devices for supporting said compartment wall-forming member within said cabinet, said rigid devices extending along and bearing against opposite sides of said compartment wall-forming member, one end of each rigid device being secured to the cabinet outer wall opposite to the apertured wall thereof and the free end of each of said cantilever devices being attached to the edge portion of said compartment wall-forming member adjacent the aperture therein.

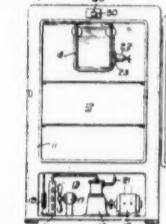
2,322,603. AIR DRYING APPARATUS. Carl Thunim, Yeadon, and Percy Bartlett, Springfield, Pa., assignors to General Electric Company, a corporation of New York. Application January 16, 1941, Serial No. 374,792. 9 Claims. (Cl. 183—4.)



1. An apparatus for removing moisture from a gas comprising a closed tank

adapted to store a gas under pressure and having an inlet for admitting gas thereto and an outlet for discharging gas therefrom and valves for retaining gas under pressure in said tank, a removable container secured directly to said tank and arranged in communication therewith, said container being arranged to hold a mass of hygroscopic material and present a substantial area of said material in direct contact with gas in said tank for removing moisture from the gas in said tank, a heater for heating the material in said container for driving moisture therefrom to recondition the material, and means including a discharge connection for bleeding air from said tank through said container during operation of said heater to discharge to the outside moisture removed from the hygroscopic material.

2,322,714. REFRIGERATING APPARATUS. Milton Kalischer, Longmeadow, Mass., assignor to Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa., a corporation of Pennsylvania. Application November 15, 1940, Serial No. 365,822. 10 Claims. (Cl. 62—4.)



1. In refrigerating apparatus, the combination of an evaporator, a compressor for circulating refrigerant through the evaporator, a motor for driving the compressor, a switch for controlling the operation of the motor, a thermostatic element in heat exchange relation with said evaporator for opening and closing said switch at predetermined low and high temperatures, and means for varying the temperatures at which said thermostatic element opens and closes, said means including an electrical heater in heat exchange relation with said thermostatic element and a single manually operable member for controlling said heater and said motor to provide continuous operation of said motor, complete de-energization of said motor, or automatic cyclic operation of said motor in response to one or more pre-selected mean evaporator temperatures.

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SAVES time—SIMPLIFIES leak detection problems—CONSERVES refrigerant.

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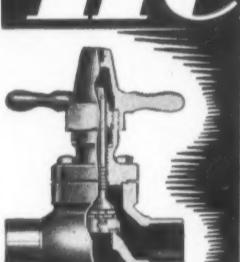


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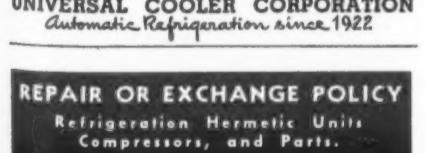
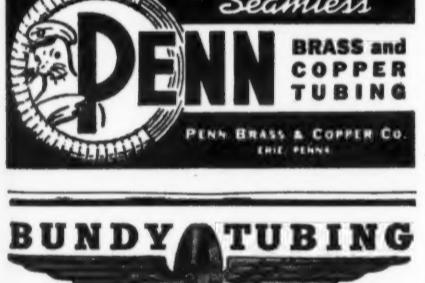
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Detroit Contractors Training Program Means WMC Help on Manpower

(Concluded from Page 1, Column 2)
enlist the aid of the WMC through Selective Service Deferments, assignment of men by the USES, men to train such as returned veterans, etc., but found a deaf ear at the WMC office because no replacement training program had been set up.

Now that the training program has been set up the service contractors are said to be getting more consideration from the WMC on these matters.

The man who will oversee the actual training, although he himself may not teach any of the classes, is Carl Turnquist, supervisor for the Vocational Training for War Production Workers, a division of the WMC.

Mr. Turnquist, who has directed the refrigeration training in the Detroit Public Schools since 1932, is well known for having trained many of the servicemen now in business in Detroit, and is the author of a book on refrigeration.

The instruction classes will be held in a shop laboratory of Cass Technical high school in Detroit, in which public school refrigeration classes are taught. The instruction and laboratory facilities will be furnished through the Vocational Training for War Production Workers. The men will not be paid while attending classes.

Trainees will attend classes from 6 to 10 p.m. two nights a week. It is planned to get some used equipment and parts from contractors for overhaul purposes in classroom work. When the men finally go to work for a contractor, they will be started on some fundamental jobs such as motor or valve overhauls, and contractors will be encouraged to "upgrade" these men as rapidly as possible.

If a trainee is presently employed while taking the course, he can appeal to the U.S. Employment Service upon completion of his training for transfer to refrigeration service work on a full time basis, and if the training program has approval, he in all probability will get the transfer.

An "apprentice training" program, whereby boys 16 to 18 years old would be allowed to work two weeks for an employer, and then spend two weeks in school, is also part of the plan. Contractors, however, do not take to this because most of these youths will face the draft in a year or less and thus would seem to offer

little help.

Participation in this manning and training program is by supplementary agreement signed by each individual company subscribing to the plan. The contractors signify the number of men they want, and agree to either hire those men during the time they are being trained, or at least at the completion of their training.

Thomas P. Ross of the Apprentice & Training Service, WMC, has been particularly helpful in the development of this program, and is doing

everything possible to get it underway as speedily as possible.

The committee of the Refrigeration Contractors Association of Detroit in charge of the manning and training plan includes: A. C. Ellerbusch, (chairman); Raymond M. Shock, (secretary); George C. Murphree, C. D. Young, Charles B. Edwards, Jr., George L. Johnston, E. L. Hayes.

The following is an outline of the proposed course of training for "War Emergency Refrigeration Service Men."

I. Objective: A short intensive training program (only practical items) covering diagnosis, replacement, and repair of single and multiple installations.

II. Theory:

A. Energy: energy in equals energy out.

B. Pressure, temperature, and heat.

C. The various refrigeration cycles:

1. Dry system (expansion valves).

2. Flooded system.

(a) Lowside float

(b) Highside float

(c) Capillary tube.

3. Properties of refrigerants.

4. Multiple systems.

III. The Single System.

A. Trouble Shooting

1. Technique of using gauges, thermometers, etc.

2. Refrigerant troubles

3. Lubrication troubles

4. Mechanism troubles

(a) Compressor

(b) Refrigerant control

(c) Belt tension control

(d) Belt tension alignment.

5. Electrical Troubles

(a) Motor

(b) Thermostat.

B. Replacement of parts

1. Compressor

2. Refrigerant control

3. Motor

4. Refrigerant.

C. Repair of parts.

D. Safety.

IV. Multiple System:

A. Trouble shooting.

B. Replacement of parts.

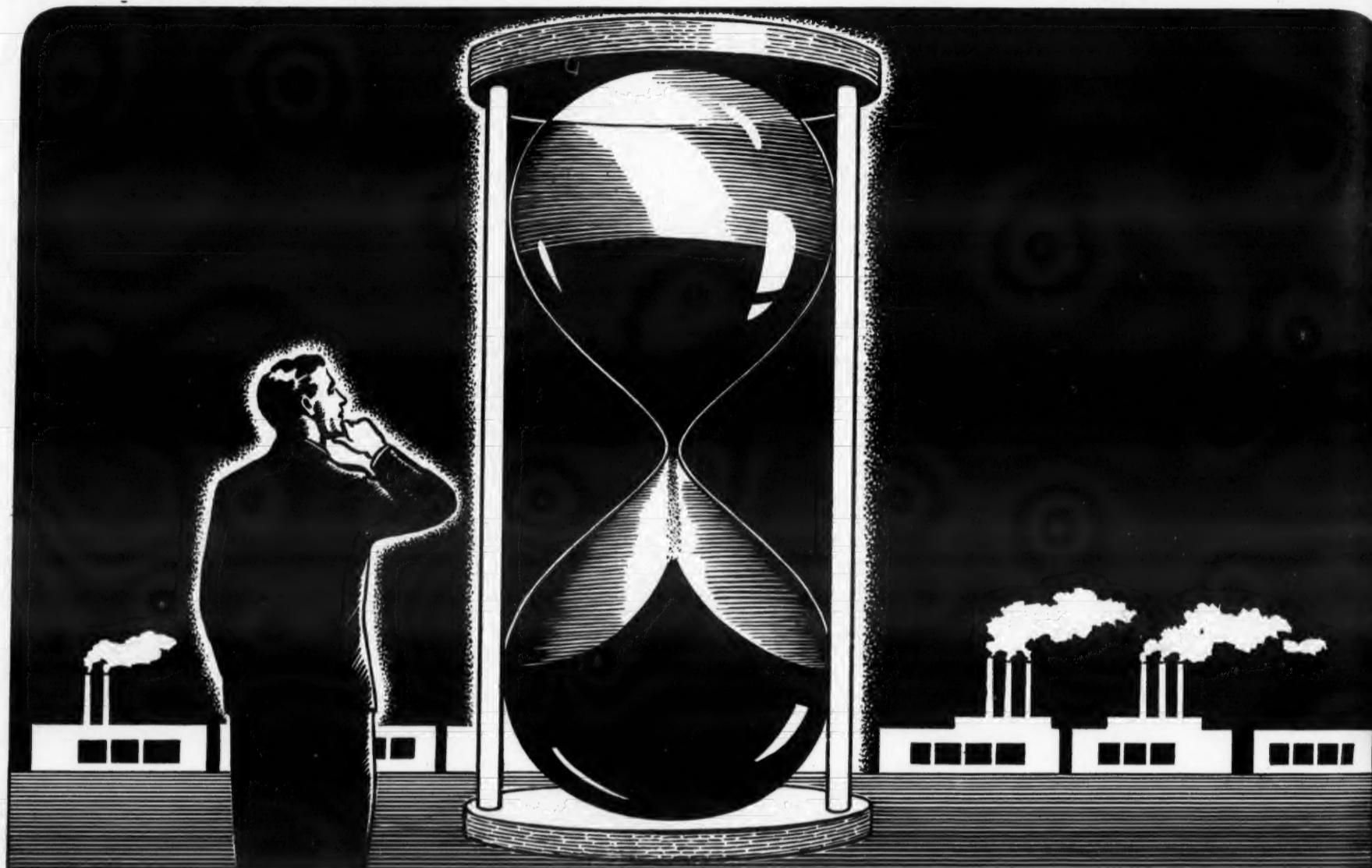
C. Repair of parts.

V. Customer Contract Techniques

A. Monetary responsibilities.

B. Guarantees and warranties.

C. Personality problems and assets.



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Although restricted at the present time these items figure very prominently in the post-war expansion program of a large Chicago merchandising organization. We think so much of the future possibilities that we are even at this time interested in engaging the services of two well qualified and fully experienced men at from \$6,500 to \$10,000 a year.

The men we are seeking have done a successful job of merchandising these lines either with a reputable manufacturer or a large retail organization and are now anxious to consider a connection with greater responsibilities. They are family men not over 38 years of age.

If you qualify and wish to be considered, please send full and complete details regarding your age, education, number and relationship of dependents, draft status, past work history and salaries earned. Also include your phone number and, if possible, a recent snapshot. You may list your present employer as all replies will be held in strict confidence. Convenient interviews will be arranged in the near future.

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For, when the war is won, there will be NO TIME!

No time for research . . . no time for development . . . no time for building business. Time is being discounted TODAY. After the war will be too late to begin. The post-war demand will be for refrigeration products that are READY.

When the boom begins there will be NO TIME!

No time to get organized . . . no time to develop customers . . . no time to create a business. Demand will be tremendous . . . and IMMEDIATELY.

Remember this and build today . . . NOW . . . the background, the source of supply and the customers which will mean MOST to you when victory comes. And, incidentally, you'll find them plenty profitable RIGHT NOW . . . which leaves very little excuse for postponing the matter.

Time is a commodity . . . but there are no used models. Let's make the most of it before it's rationed.

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P. S. Buy U. S. War Bonds . . . or we're all wasting our time.

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